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Air Quality Data for Nonmetallic Inorganic Ions Nitrate and Sulfate for 1977 and 1978 from the National Air Surveillance Networks

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AIR QUALITY DATA FOR NONMETALLIC INORGANIC IONS: NITRATE AND SULFATE FOR 1977 AND 1978 FROM THE NATIONAL AIR SURVEILLANCE NETWORKS

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The National Air Surveillance Networks provide information on air quality for many urban and nonurban locations within the United States. This report summarizes the network data for two nonmetallic inorganic ions (nitrate and sulfate) determined from high volume samples collected during 1977 and 1978. Concentration values are presented in the form of cumulative frequency distributions. Arithmetic and geometric sample statistics are also reported, as are measures of the precision and bias associated with the analytical methods employed.

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FOREWORD

Measurement and monitoring research efforts are designed to anticipate potential environmental problems, to support regulatory actions by developing an in-depth understanding of the nature and processes that impact health and the ecology, to provide innovative means of monitoring compliance with regulations and to evaluate the effectiveness of health and environmental protection efforts through the monitoring of long-term trends. The Environmental Monitoring Systems Laboratory, Research Triangle Park, North Carolina, has the responsibility for assessment of environmental monitoring technology and systems; implementation of agency-wide quality assurance programs for air pollution measurement systems; and supplying technical support to other groups in the Agency including the Office of Air, Noise and Radiation, the Office of Toxic Substances and the Office of Enforcement.

Concentrations of sulfate and nitrate ions in particulate matter from the National Air Surveillance Networks are presented in this report. Measures of the analytical data quality (precision and accuracy) are also included. This report is essentially a continuation in a series of publications of network data.

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Director
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Research Triangle Park, North Carolina

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ABSTRACT

The National Air Surveillance Networks, which have existed for over twenty years, provide information on air quality for many urban and nonurban locations within the United States. This report summarizes the network data for two nonmetallic inorganic ions (nitrate and sulfate) determined from high volume samples collected during 1977 and 1978. Concentration values are presented in the form of cumulative frequency distributions. Arithmetic and geometric sample statistics are also reported as are measures of the precision and bias associated with the analytical methods employed. Earlier publications[1-3] have reported data collected during 1971 through 1974, 1975, and 1976.

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ACKNOWLEDGMENTS

The data in this publication were collected with the generous support of the many state and local air pollution control agencies that operate the National Air Surveillance Network stations. Also, the ten EPA Regional Offices have participated in this program since 1973 by sending weighed high volume filters to the centralized laboratory of the Environmental Monitoring Systems Laboratory for analysis.

The authors also thank those who contributed their time and effort to publishing this document.

SECTION 1

INTRODUCTION

ORGANIZATIONAL STRUCTURE

The U.S. Environmental Protection Agency conducts a variety of air sampling activities to obtain information about air quality in the United States. Often this work is accomplished with the assistance and cooperation of state and local agencies. One such program consists of the National Air Surveillance Networks (NASN) which have existed for over 20 years. As shown in Table 1-1, several changes in the operation of the NASN have occurred since January 1972.

TABLE 1-1. NASN NETWORK MODIFICATIONS

Month/Year	Change	Impact*
January 1972	Sample schedule changed from random biweekly to 12-day systematic samples, first sample collected 1/10/72.	All sites
December 1972	Decentralization, Region II	NJ, NY, PR
April 1973	Decentralization, Region I	CT, ME, MA, NH, RI, VT
December 1973	Decentralization, Regions V, VII, VIII, IX, X	IL, IN, MI, MN, OH, WI, IA, KS, MO, NE, CO, MT, ND, SD, UT, WY, AZ, CA, HI, NV, AK, ID, OR, WA
January 1974	Decentralization, Regions III, IV, VI	DE, DC, MD, PA, VA, WV, AL, FL, GA, KY, MS, NC, SC, TN, AR, LA, NM, OK, TX

*Abbreviations coincide with standard U.S. mail code designations for states.

The first change, in sampling schedule, was made to encourage coincident sampling with state and local ambient monitoring programs. In addition to assisting with the EPA sampling network, state and local agencies administer their own air pollution control programs. These changes were made to promote better overall program coordination.

The second change, decentralization, was undertaken to shift air monitoring responsibilities from one centralized laboratory - the Environmental Monitoring Systems Laboratory at Research Triangle Park (EMSL/RTP) - to the 10 EPA regional laboratories. The 14-month decentralization process was completed in January 1974.

Also in January 1974, the responsibilities of the 10 EPA regional offices were expanded to include overall management of the NASN sites. Additional duties included weighing sample filters and determining concentrations of total suspended particulates (TSP). Table 1-2 and Figure 1-1 show the regional office locations and the geographic areas they serve.

TABLE 1-2. EPA REGIONS AND LOCATIONS OF REGIONAL OFFICES

Region	Regional Office Location
I	Boston, Massachusetts
II	New York, New York
III	Philadelphia, Pennsylvania
IV	Atlanta, Georgia
V	Chicago, Illinois
VI	Dallas, Texas
VII	Kansas City, Missouri
VIII	Denver, Colorado
IX	San Francisco, California
X	Seattle, Washington

Currently, after completing their tasks, the regional laboratories send sample filters to the EPA Filter Bank (FB) for routine analysis of trace constituents, such as metals, nonmetallic inorganic ions, and benzo(a)pyrene (BaP). Filters are stored at the FB for nonroutine, special analyses as needed.

Although pollutant monitoring is decentralized, analysis and publication of trace pollutant data remains the responsibility of EMSL/RTP.

SAMPLE COLLECTION

Air quality samples are collected at several urban and nonurban NASN sites located across the country. Urban sites are generally located within a city, town, or adjacent suburb. Nonurban sites were originally located in rural or remote areas, although over time, many of these rural areas became more heavily populated and were subjected to the influences of

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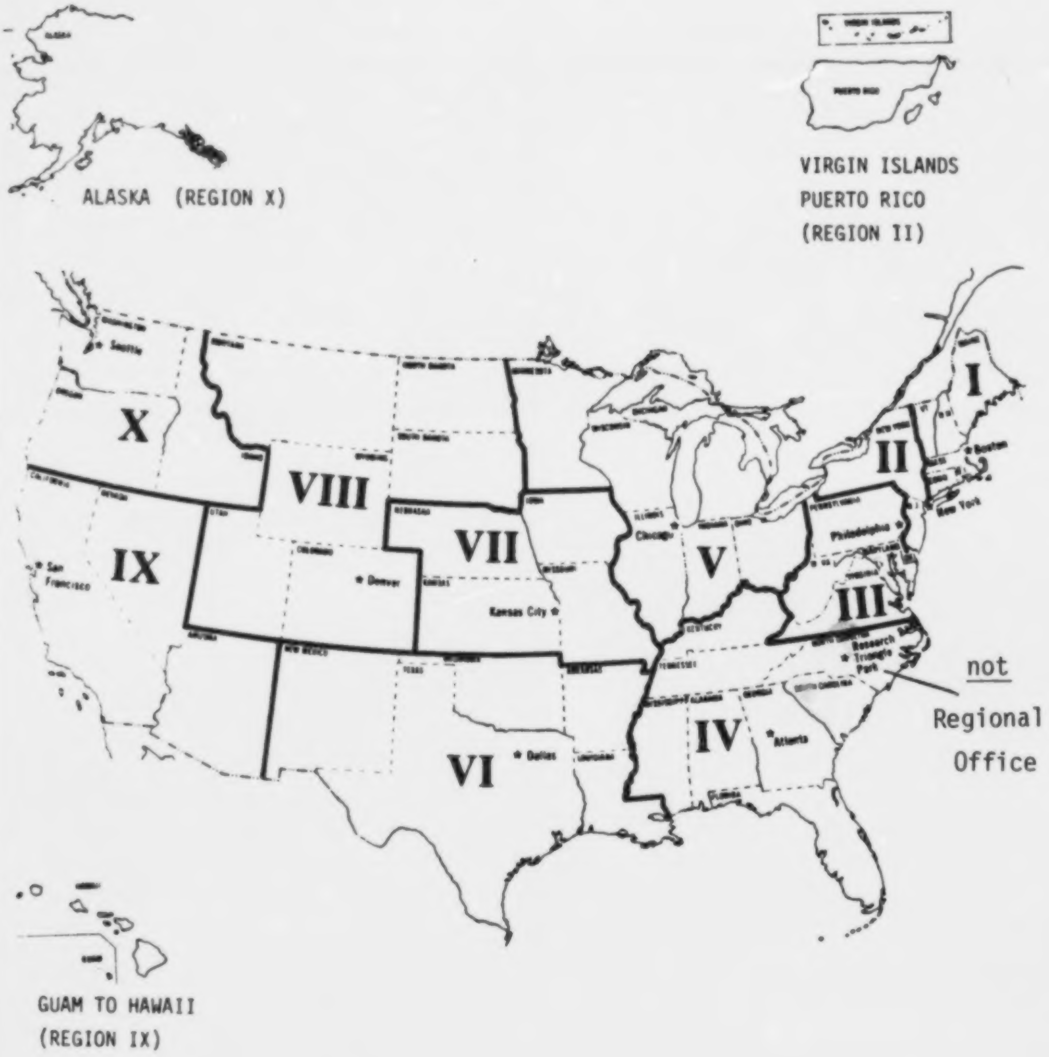
ALASKA (REGION X)
VIRGIN ISLANDS
PUERTO RICO
(REGION II)
X
Seattle
VIII
IX
San Francisco
VII
Denver
Kansas City
V
Chicago
I
II
Boston
New York
Philadelphia
III
Research Triangle Park
not Regional Office
IV
Atlanta
VI
Dallas
GUAM TO HAWAII
(REGION IX)

Figure 1-1. EPA Regions and Regional Offices

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spreading urbanization. Voluntary operation of each site was provided through the generous assistance of local or state agencies, and individuals such as park rangers, firemen, and policemen.

Prior to 1972, 24-hour samples (beginning at midnight) were collected according to a biweekly (26 samples per year) modified random sampling schedule. The schedule was modified to ensure equal representation for each day of the week.

Since January 10, 1972, samples have been collected every twelth day (30 or 31 samples per year). This schedule is easily implemented in the field, and no longer needs annual revision.

DATA HANDLING AND ANALYSIS

After performing their duties, the regional laboratories send TSP values to the National Aerometric Data Bank (NADB). Weighed filters are sent to the FB for routine, trace constituent analysis, and for storage until nonroutine analyses are needed. Resulting data are published by EMSL/RTP and sent to the NADB for archiving.

Sampling data for air quality summaries were screened by EMSL/RTP to exclude anomalous data. Precision and bias of the analytical data were determined using statistical analysis. Data accuracy was determined to assist with interpretation of air quality summaries.

The air quality summaries presented here include annual concentration data classified by urban and nonurban origin, and were compiled for the nation as a whole, as well as for individual site locations. Data are presented as cumulative frequency distributions. Arithmetic and geometric means, and standard deviations, are also tabulated.

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SECTION 2

LABORATORY METHODS

SAMPLING PROCEDURE

The mass of particulate matter per volume of air was determined by weighing a filter before and after sampling, and measuring the sample air flow rate. Air was drawn through a preweighed glass fiber filter with a high volume air sampler.

The sample air flow rate was set at approximately 1.7 cubic meters per minute, or approximately 2500 cubic meters of air during the 24-hour sampling period. A calibrated rotameter was read at the beginning and end of the sampling period, and the average value was used to obtain the average sample flow rate. Using the sampling time (24 hours) and the measured flow rate, the total sample volume of air was determined.

The filters, 20.3 by 25.4 cm, were made of flash-fired glass fiber selected for low and uniform background concentrations of the pollutants to be measured. To eliminate filters having pinholes, creases, or other flaws that could affect air flow, the filters were visually screened for imperfections by placing each filter in front of a beam of light. Prior to the initial weighing, the filters were equilibrated for a minimum of 24 hours at a temperature of 24° Centigrade and a relative humidity of 50 percent or less. A balance scale was used that permitted weighing the filters without bending them.

The filters were then distributed unfolded to the cooperating local agencies for the urban sites and to the designated participant responsible for operating the nonurban site. After sampling, the filters were folded in half lengthwise with the collected particulate matter inside, and returned to the laboratory. The filter with the collected particulates was again equilibrated for at least 24 hours at a temperature of 24° Centigrade and a relative humidity of 50 percent or less, and then weighed to determine the amount of particulate matter that was collected. These suspended particulate mass values were sent to the NADB on a routine basis and the filters were sent to the FB for further analyses.

NONMETALLIC ION ANALYSIS PROCEDURE

Analysis for inorganic ions during 1977 and 1978 was performed by Northrop Services, Incorporated - Environmental Sciences, under Contract No. 68-02-2566. Tasks included analysis of blank filters, duplicate strips, and the routine sample filters.

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Analyses for nitrate and sulfate ions were performed with autoanalyzers on an aqueous extract of an 8.3 percent section of the particulate filter; i.e., a 1.9 cm strip was cut across the fold. The filter section was washed twice to obtain the final volume of 50 milliliters. This single solution was used for both analyses.

The analytical procedure for each ion was as follows:

1. The extract with water was analyzed for nitrate ion by reduction of the nitrate to nitrite by a copper-cadmium reduction column. The nitrite was reacted with sulfanilamide in acidic solution to form a diazo compound. This compound then coupled with N-1-Naphthylenediamine dihydrochloride to form a reddish-purple azo dye which was determined colorimetrically at a wave length of 520-540 nanometers.

2. The extract was analyzed for sulfate ion by the methylthymol blue (MTB) method using a single channel Technicon Autoanalyzer II system equipped with a linearizer. The MTB method is based on the spectral difference which exists in basic solution (pH 12.5-13.0), between the barium complex of MTB and free MTB. At this pH, the barium complex is blue and free MTB is brownish-red (absorbs light at 460 nm). Thus, the color of solutions containing both the free MTB and the complex appears as gray. The amount of free MTB, monitored colorimetrically at wave lengths of 460-480 nanometers, was the measure of the amount of sulfate in the sample.

SECTION 3

QUALITY CONTROL

INTRODUCTION

This section presents the quality control data from which analytical detection limits and analytical performances were determined. Assessment of analytical performance includes estimation of precision and bias. These estimates are statistically combined to determine an overall measure of analytical quality. It is important to note that there are several potential sources of measurement error (e.g., flow control, artifact formation, shipping and storage losses) associated with sample collection and handling procedures which are not under direct control by EMSL/RTP. These sources are not included in the estimates of data quality presented here.

Of the samples reported, only one value for sulfate ($SO_4^=$) was determined to be an outlier. This sulfate value was reported to the laboratory for reanalysis, and the new result was not significantly different from the originally reported value. All nitrate (NO_3^-) values were acceptable.

LIMITS OF DETECTION

The *limit of detection* for an instrumental analytical method is the minimum concentration of the constituent, or species of interest, that can be observed by the instrument and distinguished from instrumental noise within a specified degree of probability.[4] Limits of detection in this study were determined by fitting an equation to the instrumental noise level (expressed as a standard deviation) as a linear function of concentration, and extrapolating to zero concentration. The limits of detection values given in Table 2-1 are 3.3 times the extrapolated standard deviation, plus the intercept obtained from the response versus known concentration relationship. These limits, therefore, are the upper 97.5 percent tolerance limits, at 95 percent confidence,[5] for the instrumental noise at zero concentration.

BLANK FILTER ANALYSES AND LIMITS OF DISCRIMINATION

At least twenty clean (unexposed) filters from the filter lot used by the NASN were analyzed for NO_3^- and $SO_4^=$ ions prior to filters being distributed for sampling. The average results of these analyses, given below, were used to correct raw analyses for the initial pollutant content of the filters:

(1) NO_3^-: 0.02 μg/m^3

(2) $SO_4^=$: 0.77 μg/m^3

TABLE 2-1. LIMITS OF DETECTION, BLANK FILTER ANALYSES AND LIMITS OF DISCRIMINATION

		Concentration, $\mu g/m^3$*			
			Blank Filter Analyses		
Ion	Year	Limits of Detection	Average	Standard Deviation	Limits of Discrimination
Nitrate	1971-1974	0.06	0.06		
	1975	0.05	0.02		
	1976	0.04	0.07	0.04	0.10
	1977	0.04	0.08	0.04	0.09
	1978	0.04	0.09	0.04	0.09
Sulfate	1971-1973	0.60	0.80		
	1974	0.20	0.50		
	1975	0.05	0.30		
	1976	0.07	0.29	0.16	0.38
	1977	0.07	0.29	0.14	0.32
	1978	0.07	0.39	0.20	0.46

*The values were calculated assuming an air volume of 2500 cubic meters per filter.

During each analysis of exposed filters, blank filters were also analyzed for quality control purposes. The averages and standard deviations of these quality control blanks are presented in Table 2-1.

The *limit of discrimination* is the minimum concentration of a designated particulate that is unique to a given batch of filters and the measurement method used. Within a specified degree of probability, the limit of discrimination can be attributed to the particulate on the filter and not confused with the combined effect of the filter material and the measurement method.[6] The limit of discrimination is determined from the standard deviation of the blank filter analyses, including measurement errors associated with filter material and the analytical method. The limit of discrimination is the upper limit of the tolerance interval with $\gamma = .95$ and $P = .95$ centered at zero concentration (the average blank filter analysis is subtracted from all determinations). Calculated values for the limits of discrimination are presented in Table 2-1.

PRECISION

Table 2-2 presents precision estimates for the various analyses. Measures of precision are expressed as percentages of concentration level because precision is generally concentration dependent.

Precision estimates are based upon percent differences, determined from analyses performed on two filter strips taken from the same filter. Thus, the measure of precision includes variation caused by cutting,

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TABLE 2-2. MEASURES OF PRECISION FOR 1977 AND 1978 NASN FILTERS

		Differences Between Duplicates		Individual Analysis Values	
	Concentration Level (µg/m^3)	Std. Dev. of Percent Dif.(%)	99% Control Limits (%)	Coefficient of Varia.(%)	Approximate 95% Conf. Limits(%)
			NITRATE		
A. 1977	<3	17.08	± 44	12	± 24
	3-6	10.80	± 28	8	± 16
	>6	11.67	± 30	8	± 16
			SULFATE		
	>6	13.15	± 34	9	± 18
	6-20	7.59	± 20	5	± 10
	>20	4.42	± 11	3	± 6
			NITRATE		
B. 1978	<3	29.68	± 76	21	± 41
	3-6	15.31	± 39	11	± 22
	>6	34.13	± 88	24	± 47
			SULFATE		
	<6	15.23	± 39	11	± 22
	6-20	12.11	± 31	9	± 18
	>20	5.72	± 15	4	± 8

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extracting, and analytical processing, as well as any actual variability between filter strips. Precision measurements were made throughout the analysis period. Duplicate strips of every twentieth sample were analyzed, and precision estimates obtained. For each pair of data, percent differences were computed using the following formula:

$$\%d = [2(x_1 - x_2)/(x_1 + x_2)](100) \qquad (1)$$

where $\%d$ = percent difference between analyses of duplicate strips (difference between values divided by the average of the two values), percent

x_1, x_2 = concentration values of the two analyses of duplicate strips, $\mu g/m^3$

For each pollutant concentration range, as shown in Table 2-2, the average percent difference ($\overline{\%d}$) and the standard deviation of percent differences ($S_{\%d}$) were calculated. The standard deviation of percentages is calculated by the following equation:

$$S_{\%d} = \left[\frac{\Sigma\%d^2 - (\Sigma\%d)^2/n}{n-1}\right]^{0.5} \qquad (2)$$

The standard deviation shown in Equation 2 applies to percent differences determined from results from duplicate strip analyses, and provides a basis for control limits that may be applied to results of future duplicate strip analyses. The standard deviations and the 99 percent control limits associated with the percent differences between duplicate strips are shown in Table 2-2.

The standard deviations in Table 2-2 must be divided by $\sqrt{2}$ to obtain the standard deviation (actual coefficient of variation) that measures the analytical precision of a single reported pollutant concentration value. It has been shown that, for normal underlying parent distributions with coefficients of variation, τ, less than 0.35, the distribution of percent differences is approximately normal with standard deviation, $\sqrt{2}\tau$.[7]

The coefficient of variation values are also reported in Table 2-2 and can be used for computing approximate confidence limits on individually reported pollutant concentration values, considering precision only (i.e., assuming no bias). Approximate confidence limits are computed from the following formula:

$$L_u = X\,[1 + kC_v/100] \qquad (3a)$$

$$L_\ell = X\,[1 - kC_v/100] \qquad (3b)$$

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where L_u = upper confidence limit, $\mu g/m^3$

L_ℓ = lower confidence limit, $\mu g/m^3$

X = single reported sample value, $\mu g/m^3$

k = standard normal deviate corresponding to the desired confidence level

C_v = coefficient of variation of individual analysis values, percent

As a sample calculation, assume that an individually reported concentration for NO_3^- in 1978 is 5.3 $\mu g/m^3$. In Table 2-2, the corresponding value for the coefficient of variation is 11 percent. Assuming that 95 percent confidence limits of the true value are desired, the value of k is 1.96. Substituting these data in Equation 3:

$$L_u = 5.3\ [1 + 1.96(11)/100] = 6.4\ \mu g/m^3 \qquad (4a)$$

$$L_\ell = 5.3\ [1 - 1.96(11)/100] = 4.2\ \mu g/m^3 \qquad (4b)$$

These limits can also be interpreted that if it were possible to analyze a large number of individual strips from the same filter having a true NO_3^- concentration of 5.3 $\mu g/m^3$, 95 percent of such results would fall within the stated limits.

BIAS

An independent estimate of recovery bias introduced by the analytical process for NO_3^- and $SO_4^=$ analysis is obtained through an audit program involving analysis of strips of blank high volume filters, identical to those used for ambient air sampling, but which have been spiked with known amounts of NO_3^- and $SO_4^=$. The percent recovery is calculated as follows:

$$\text{Percent Recovery} = [\text{Analyzed Value}/\text{Known Value}] \times 100 \qquad (5)$$

Bias is equal to the percent recovery minus 100.

Samples used for audits have been developed by the Quality Assurance Division (QAD) of EMSL/RTP as part of its program for assisting analytical laboratories to improve their inhouse analysis capabilities. Each lot of samples is analyzed by QAD and a corroborative laboratory before it is accepted for use in the audit program. The QAD analysis, the corroborative analysis, and the attempted spike must agree to within 5 percent of each other; and the coefficient of variation for a spike level must be less than 2.5 percent or the samples are rejected. Table 2-3 presents the bias information.

The main use of the audit results is to chronologically document the precision and accuracy achieved by the analytical laboratory. QAD has found

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TABLE 2-3. SUMMARY OF AUDIT SAMPLE PROGRAM FOR NO_3^- AND $SO_4^=$

	Mean Concentration	Recovery (%)	Bias (%)	Standard Deviation of Recovery & Bias(%)	Number of Samples
			NITRATE		
A. 1977	<3 μg/m^3	100.7	+0.7	12.2	122
	3→6 μg/m^3	94.4	-5.6	4.5	123
	>6 μg/m^3	97.2	-2.8	3.1	123
	All samples	97.4	-2.6	8.1	368
			SULFATE		
	<6 μg/m^3	93.2	-6.8	10.4	119
	6→20 μg/m^3	94.7	-5.3	2.8	123
	>20 μg/m^3	94.1	-5.9	3.4	123
	All samples	94.0	-6.0	6.5	365
			NITRATE		
B. 1978	<3 μg/m^3	106.8	+6.8	13.0	86
	3→6 μg/m^3	95.5	-4.5	3.7	87
	>6 μg/m^3	98.8	-1.2	3.5	87
	All samples	100.3	+0.3	9.3	260
			SULFATE		
	<6 μg/m^3	92.7	-7.3	11.4	85
	6→20 μg/m^3	96.3	-3.7	3.3	87
	>20 μg/m^3	94.5	-5.5	3.9	86
	All samples	94.5	-5.5	7.3	258

that a meaningful way to display precision and accuracy is through mean and range control charts.

Every two weeks a set of 10 audit samples is given to the analytical laboratory to be analyzed with the ambient air samples. One blank, and triplicates in a high, middle, and low range are included in each set. The analytical laboratory distributes the audit samples as evenly as possible among the analysis days during the audit period and intersperses the audit samples throughout their normal analyses of ambient air samples. Mean and range control charts are constructed and routinely used for the high, middle, and low level samples.

Control charts for the 1977 filter analyses are presented in Figures 2-1 through 2-6. Figures 2-1, 2-2, and 2-3 show the result of $SO_4^=$ audit samples for the low, middle, and high levels, respectively. Figures 2-4, 2-5, and 2-6 show NO_3^- audit sample results for the low, middle, and high levels. The three levels correspond to the concentration levels shown in

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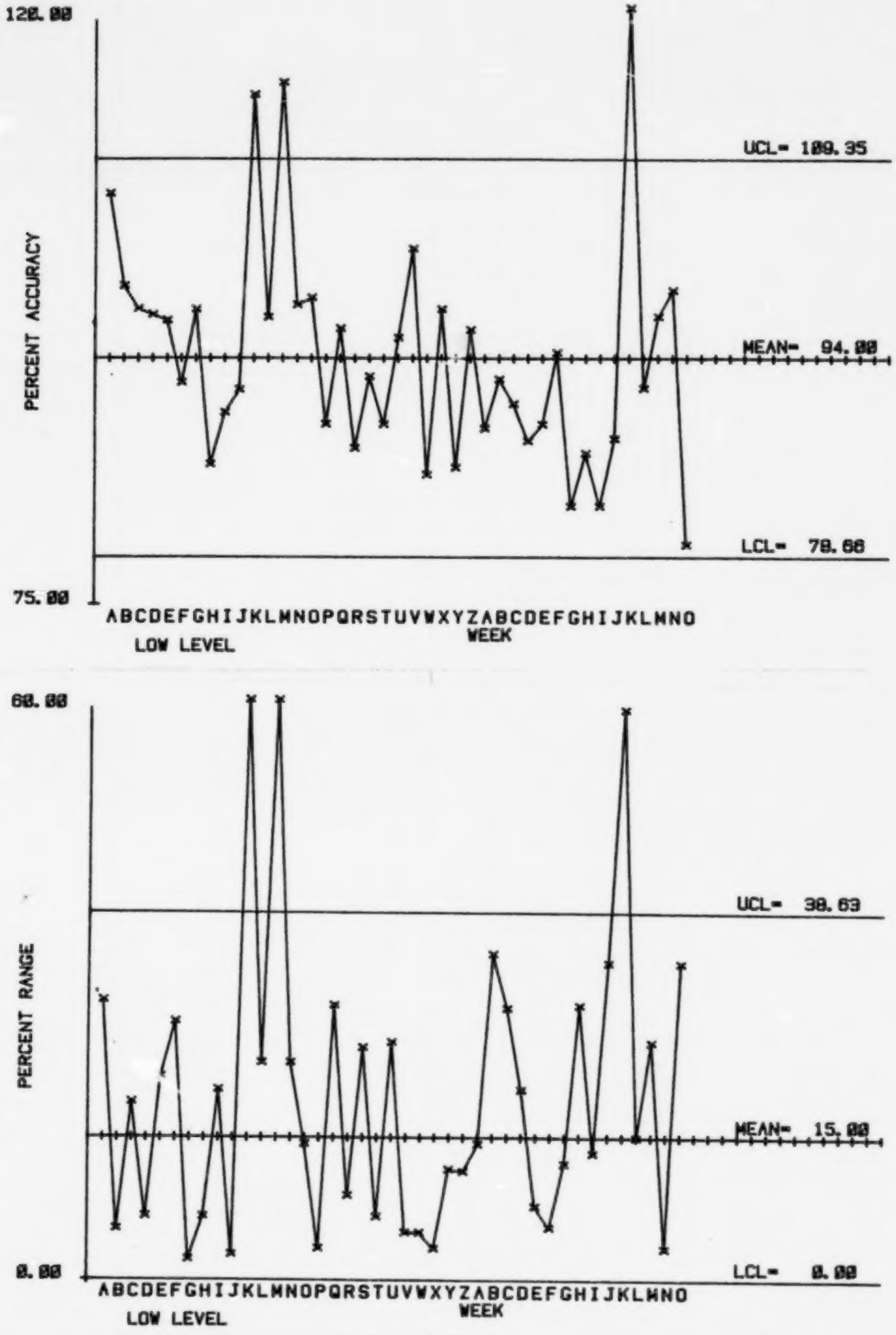

Figure 2-1. 1977 mean and range control charts (low level $SO_4^=$).

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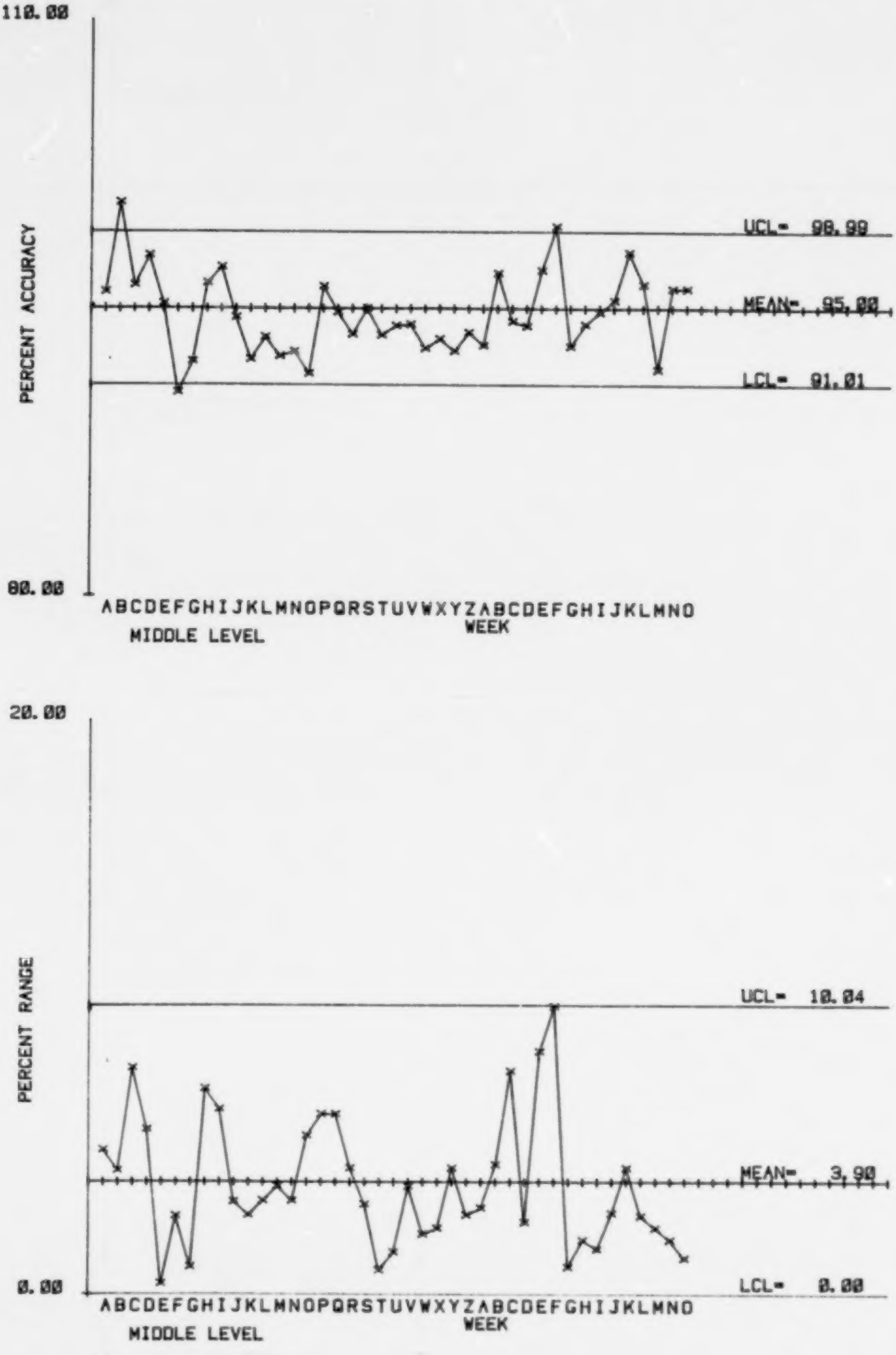

Figure 2-2. 1977 mean and range control charts (middle level $SO_4^=$).

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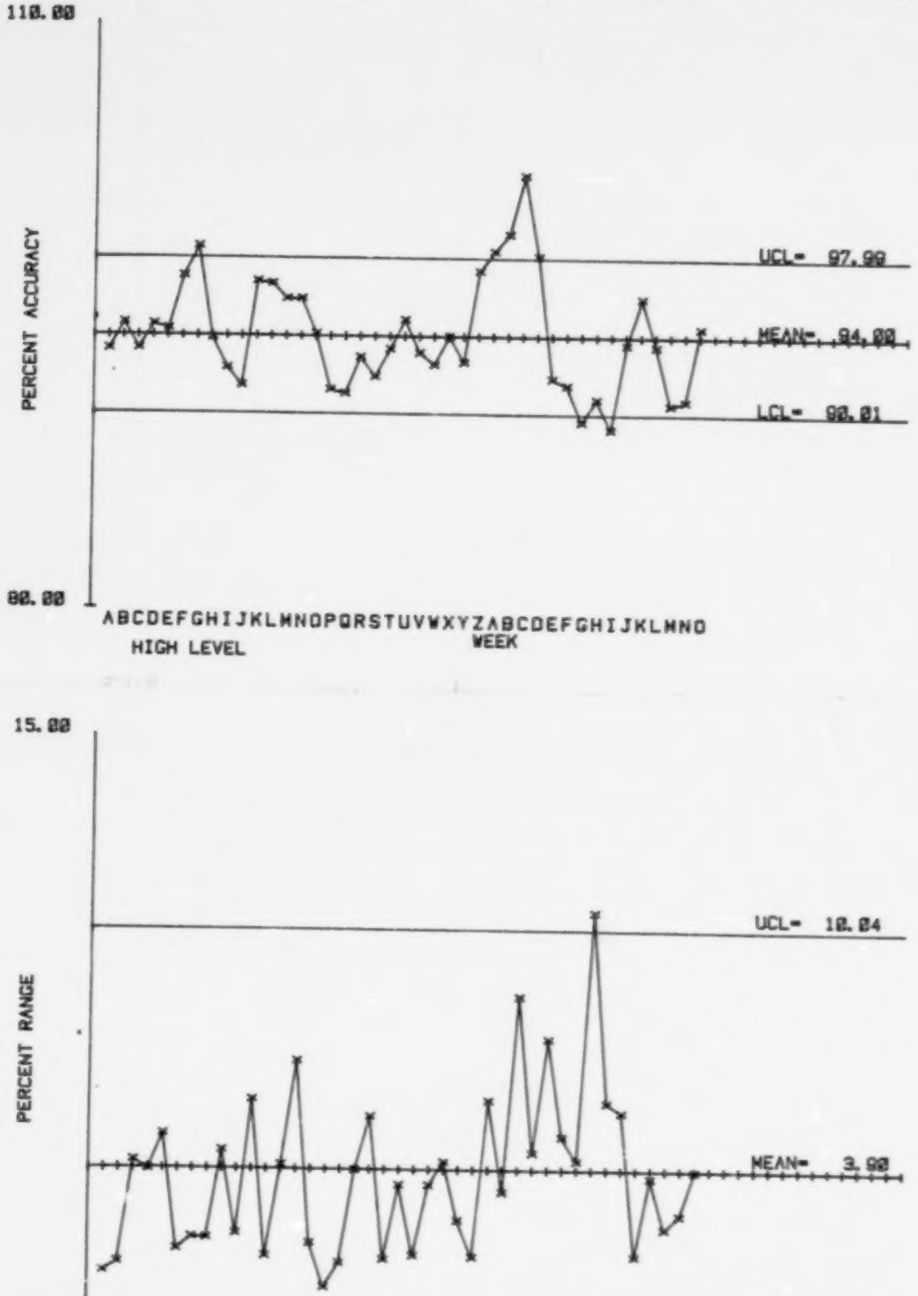

Figure 2-3. 1977 mean and range control charts (high level $SO_4^=$).

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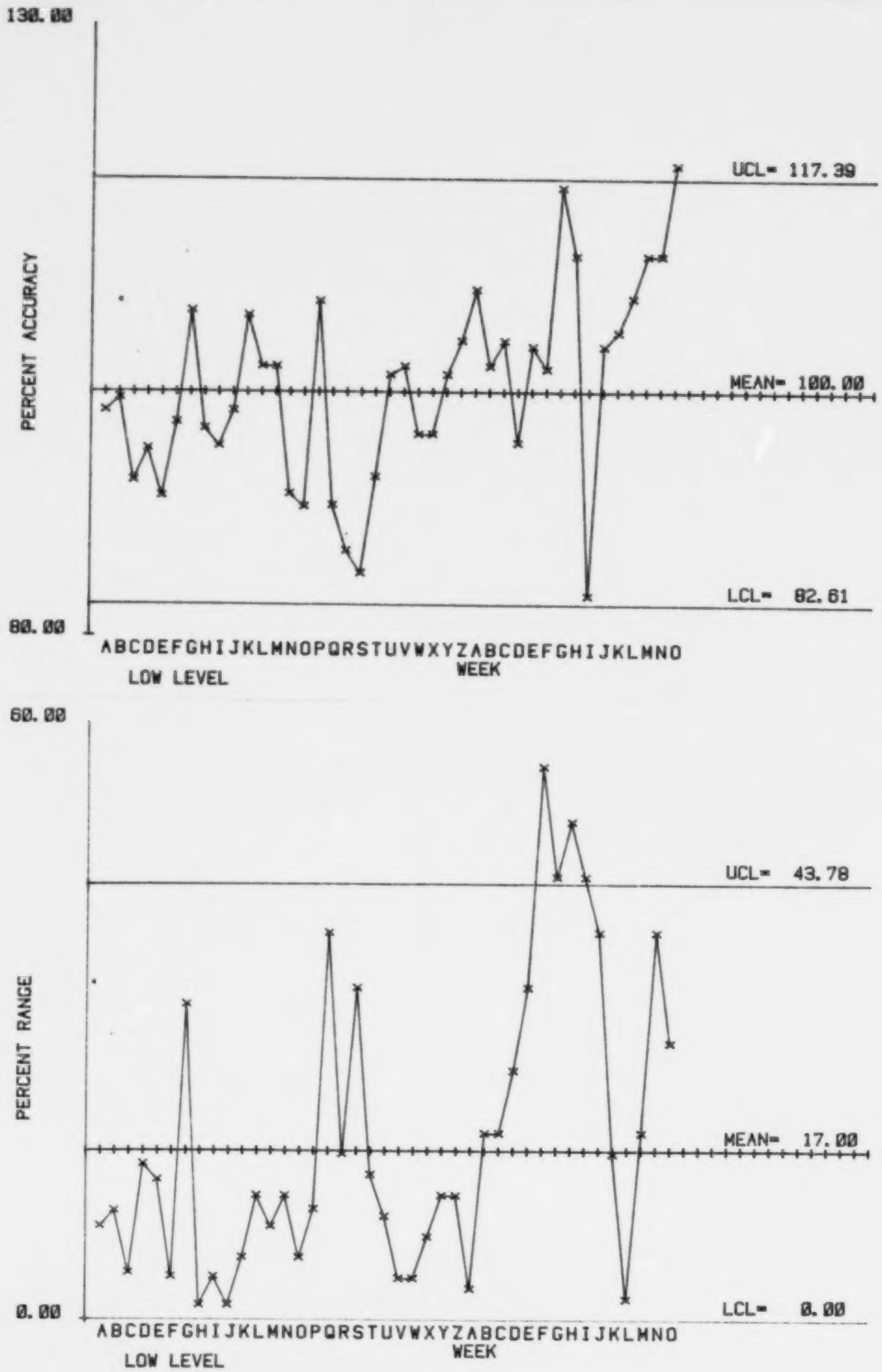

Figure 2-4. 1977 mean and range control charts (low level NO_3^-).

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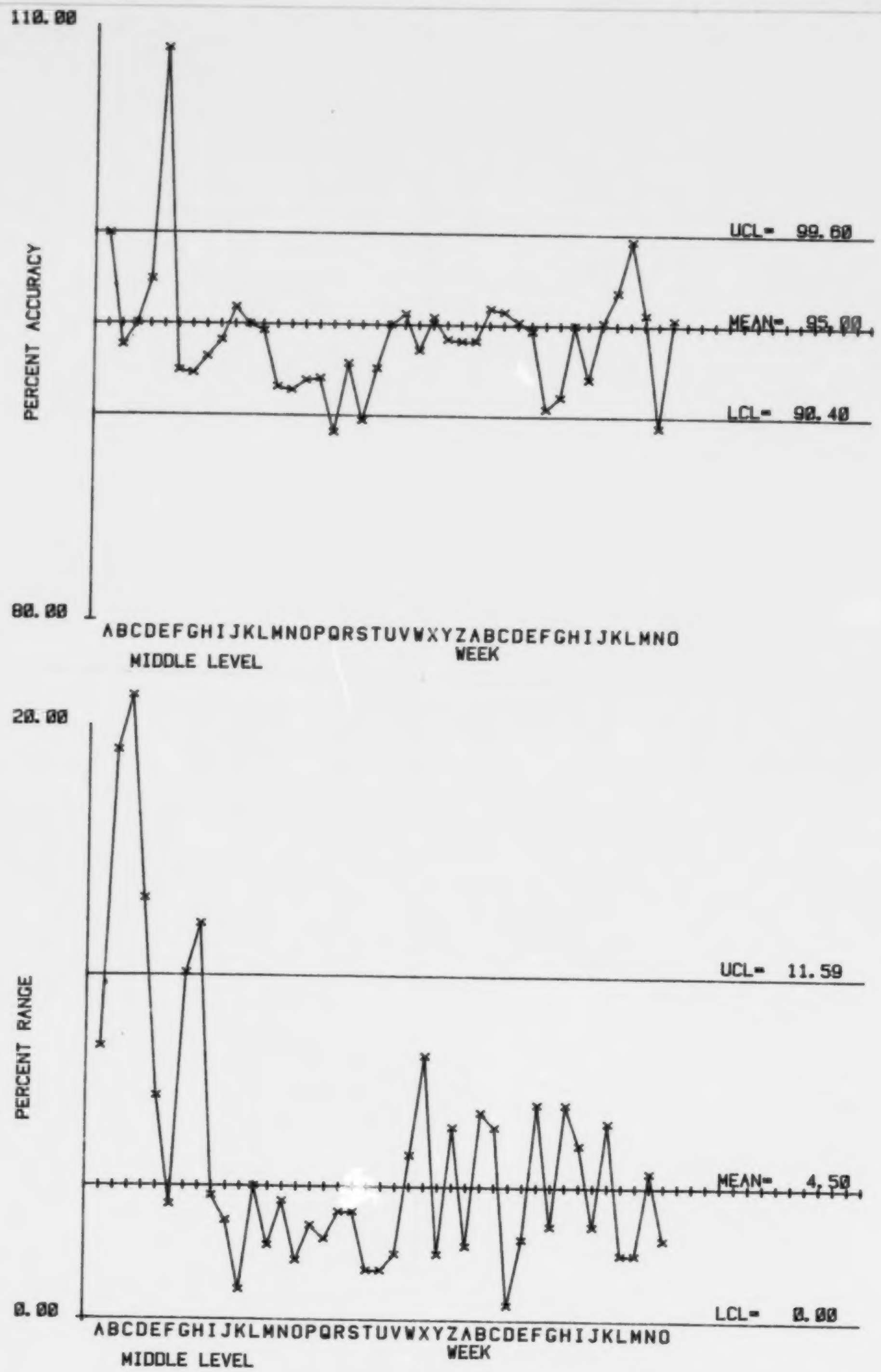

Figure 2-5. 1977 mean and range control charts (middle level NO_3^-).

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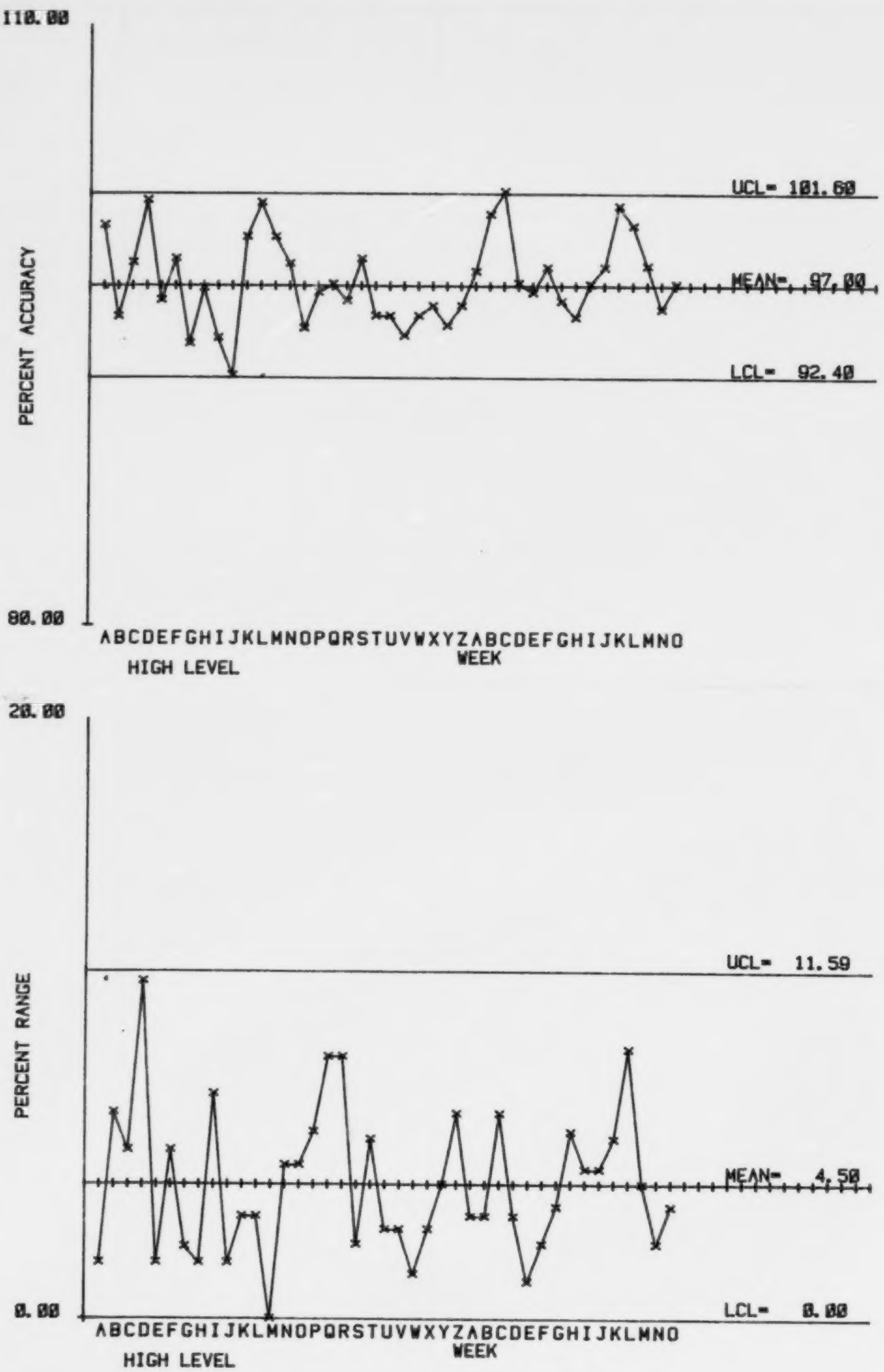

Figure 2-6. 1977 mean and range control charts (high level NO_3^-).

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Table 2-3. Similar control charts for the analyses of 1978 filters appear in Figures 2-7 through 2-12.

The means and the upper and lower control limits (UCL and LCL) were based on results from similar audit samples for 1976 filters. Control limits were three standard deviation limits representing the 99.7 percent probability limits. On the figures, the alphabetical designators along the abscissa scale (week) represent the set of audit samples given to the laboratory biweekly. Thus, the plotted values for the "Percent Accuracy" on the bottom figure of each page represent the average of the three audit samples at each level. Plotted values for "Percent Range" on the top figure of each page represent the percentage range of the three audit samples at each level, computed as follows:

$$\text{Percent Range} = [(X_H - X_L)/\overline{X}_3](100) \qquad (6)$$

where X_H = the highest value of each set of 3

X_L = the lowest value of each set of 3

$\overline{X}_3$ = the average of the 3 values of each set

The control charts reveal that very few plotted points exceed the control limits, and those exceeding the limits generally are isolated values. Hence, with few exceptions, laboratory results of the audit samples indicate that the analytical process was statistically as accurate as the 1976 analysis. The occurrence of out-of-control points triggered an investigation, including reanalysis of filters, for the period represented by the audit samples.

ANALYTICAL QUALITY ASSESSMENT

Precision and bias estimates previously discussed have been combined into an overall estimate of analytical quality. Based on the estimates of bias and precision, an individual pollutant value (minimum, maximum, or percentile) appearing in the data tables is expected to be correct (from an analysis standpoint) within the stated interval with a 95 percent confidence level.

The approximate upper and lower confidence limits (L_u and L_ℓ, respectively) are calculated as follows:

$$L_u = X\ (1 - B/100 + 1.96\ C_v/100) \qquad (7a)$$

$$L_\ell = X\ (1 - B(100 - 1.96\ C_v/100) \qquad (7b)$$

where X = the individual analysis value
B = bias, percent
C = coefficient of variation of individual analysis

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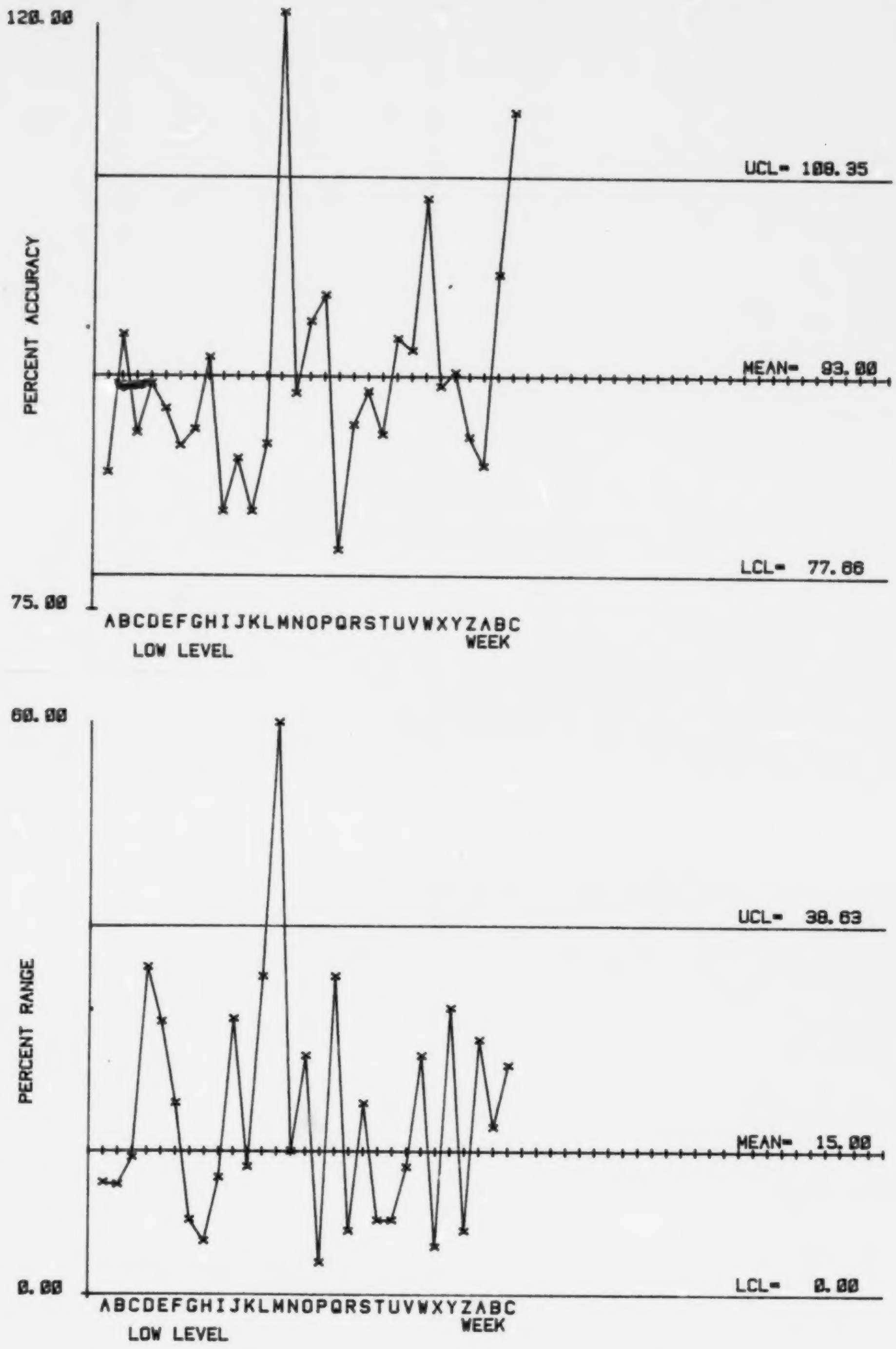

Figure 2-7. 1978 mean and range control charts (low level $SO_4^=$).

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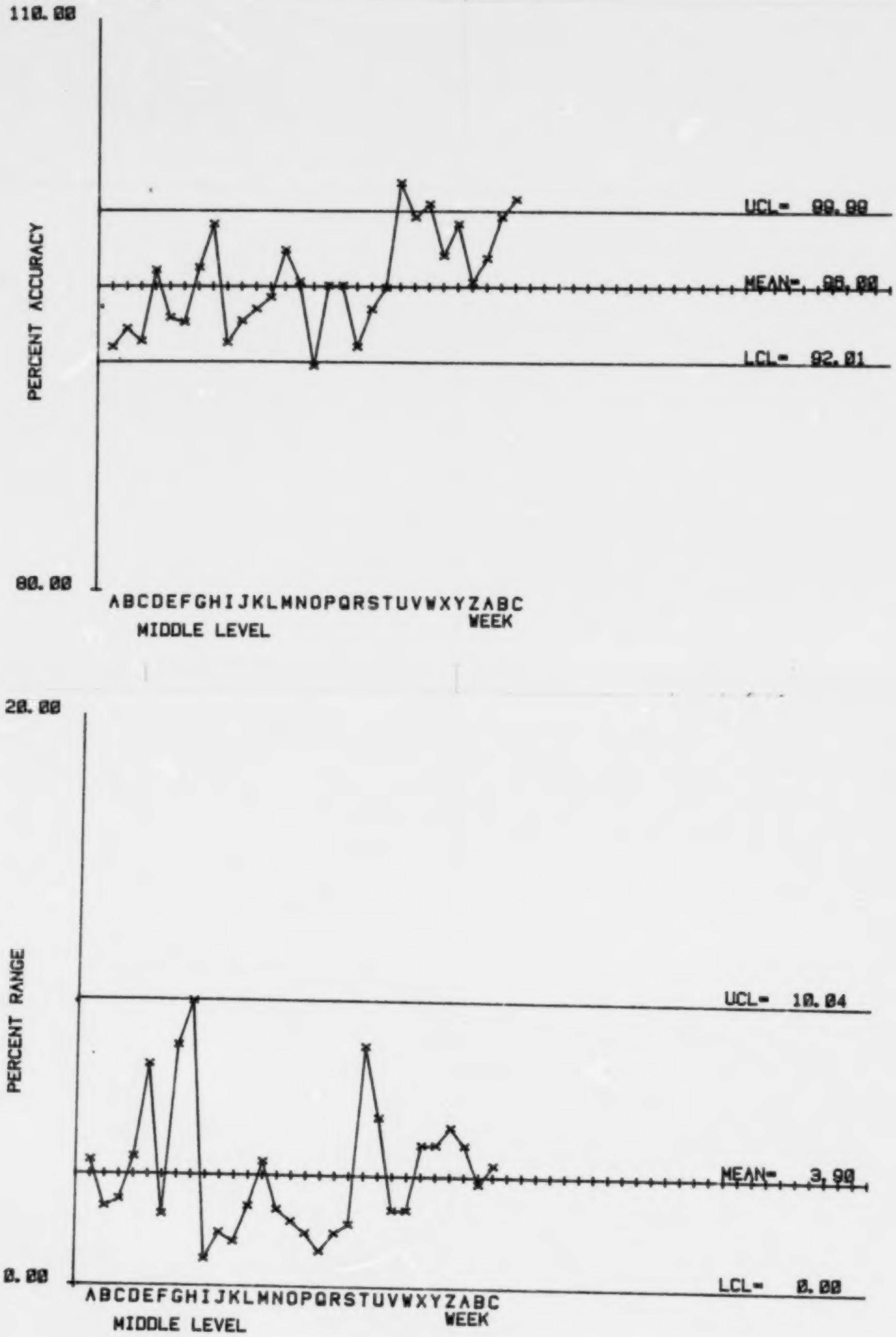

Figure 2-8. 1978 mean and range control charts (middle level $SO_4^=$).

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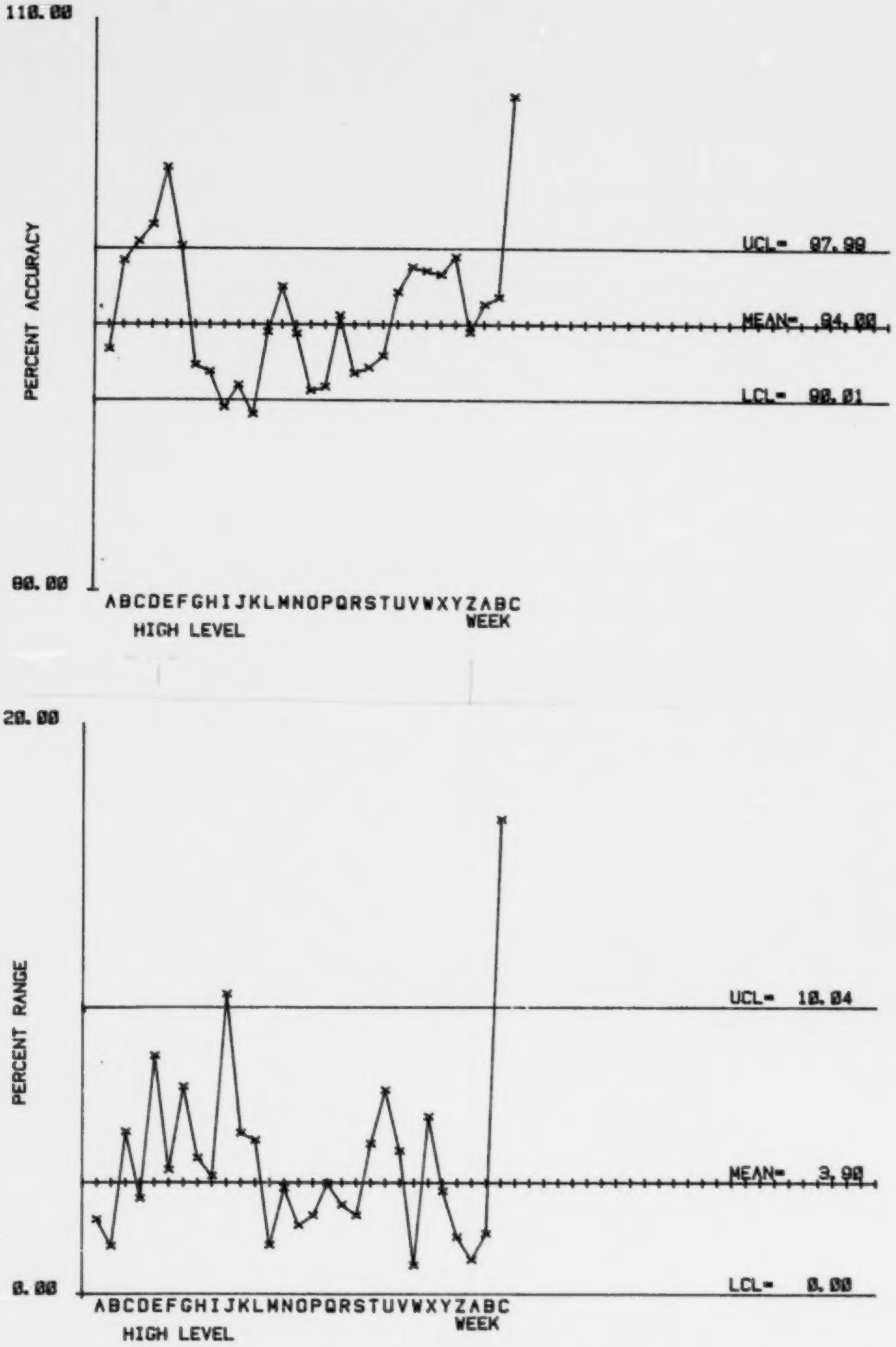

Figure 2-9. 1978 mean and range control charts (high level $SO_4^=$).

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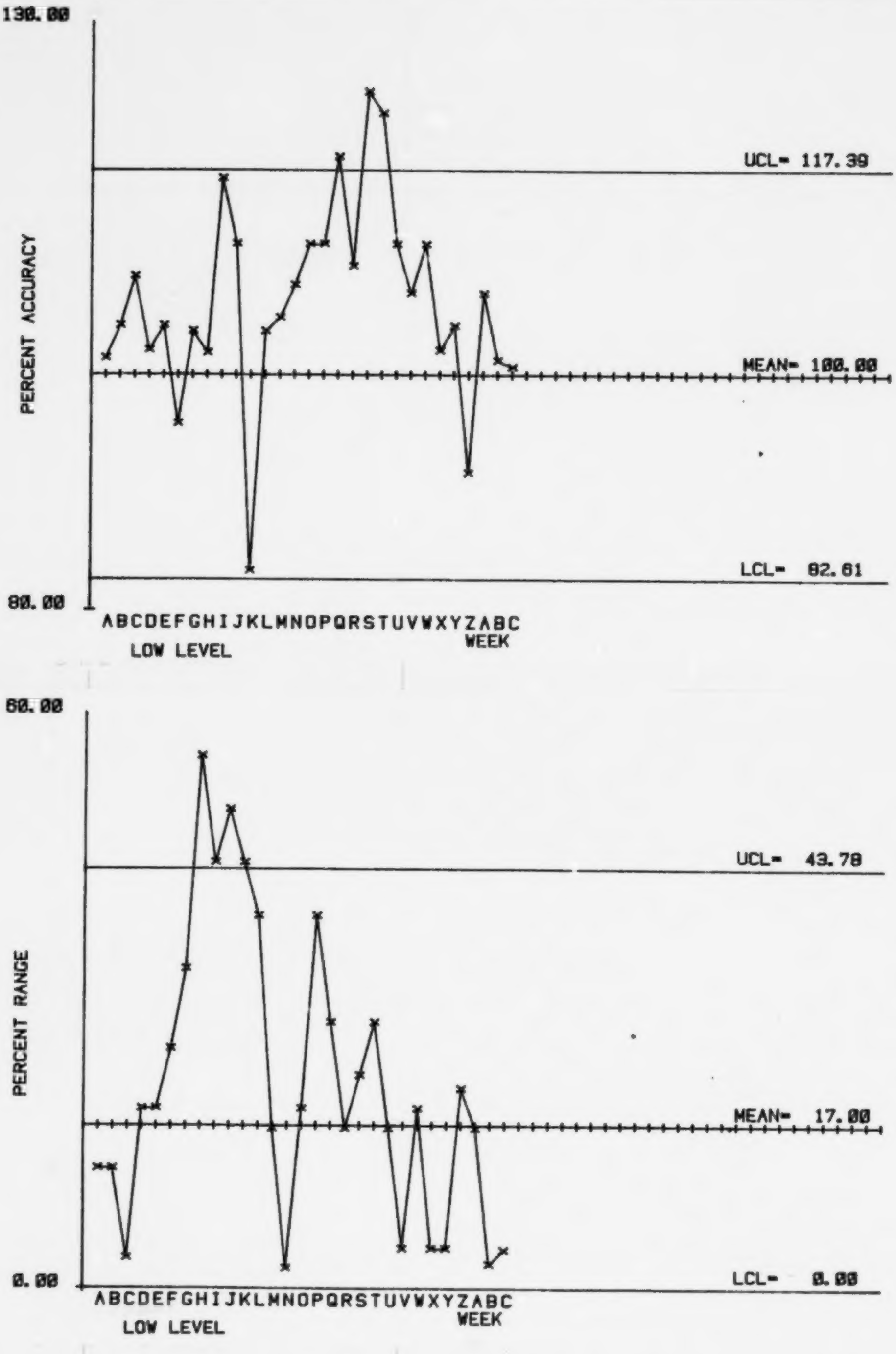

Figure 2-10. 1978 mean and range control charts (low level NO_3^-).

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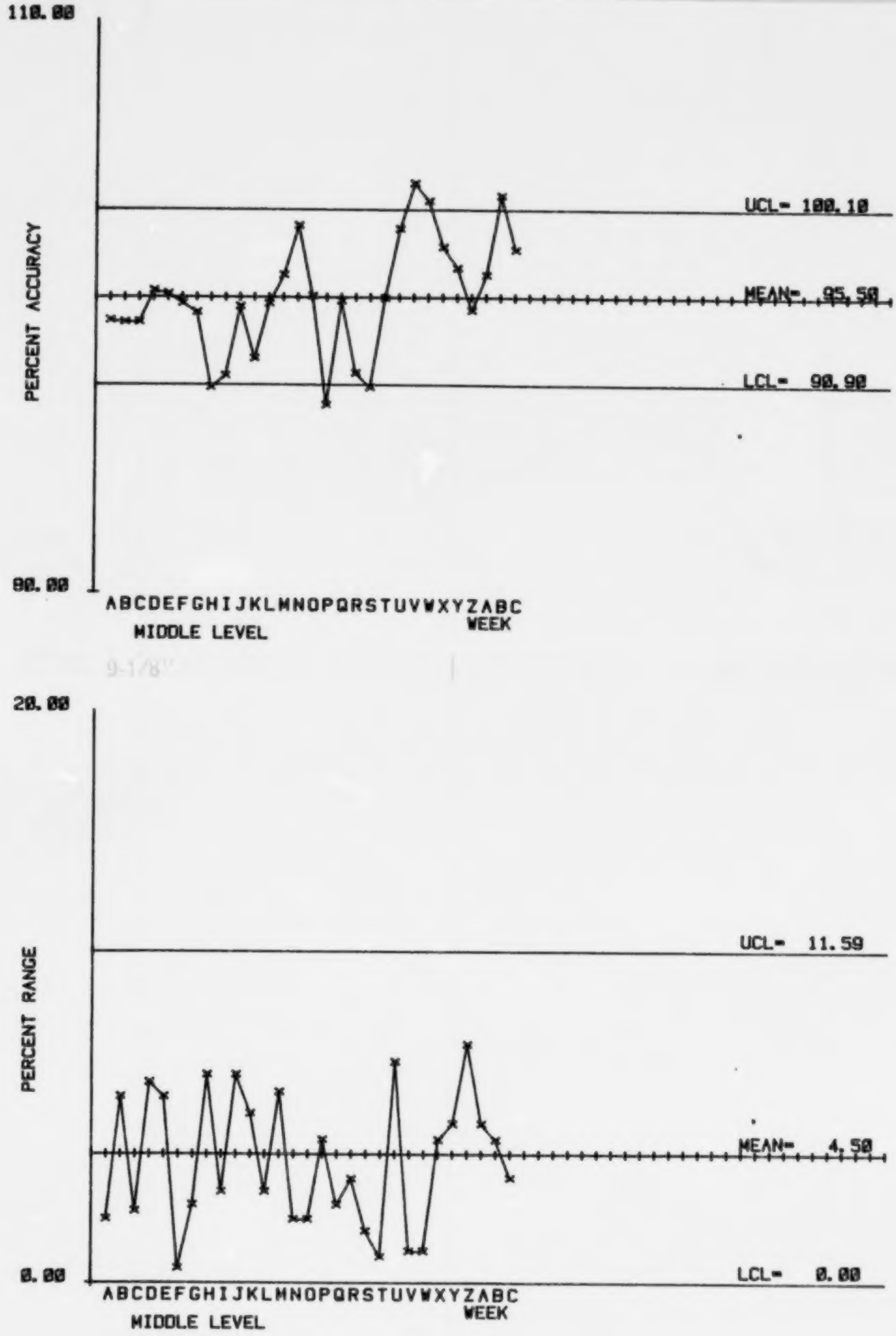

Figure 2-11. 1978 mean and range control charts (middle level NO_3^-).

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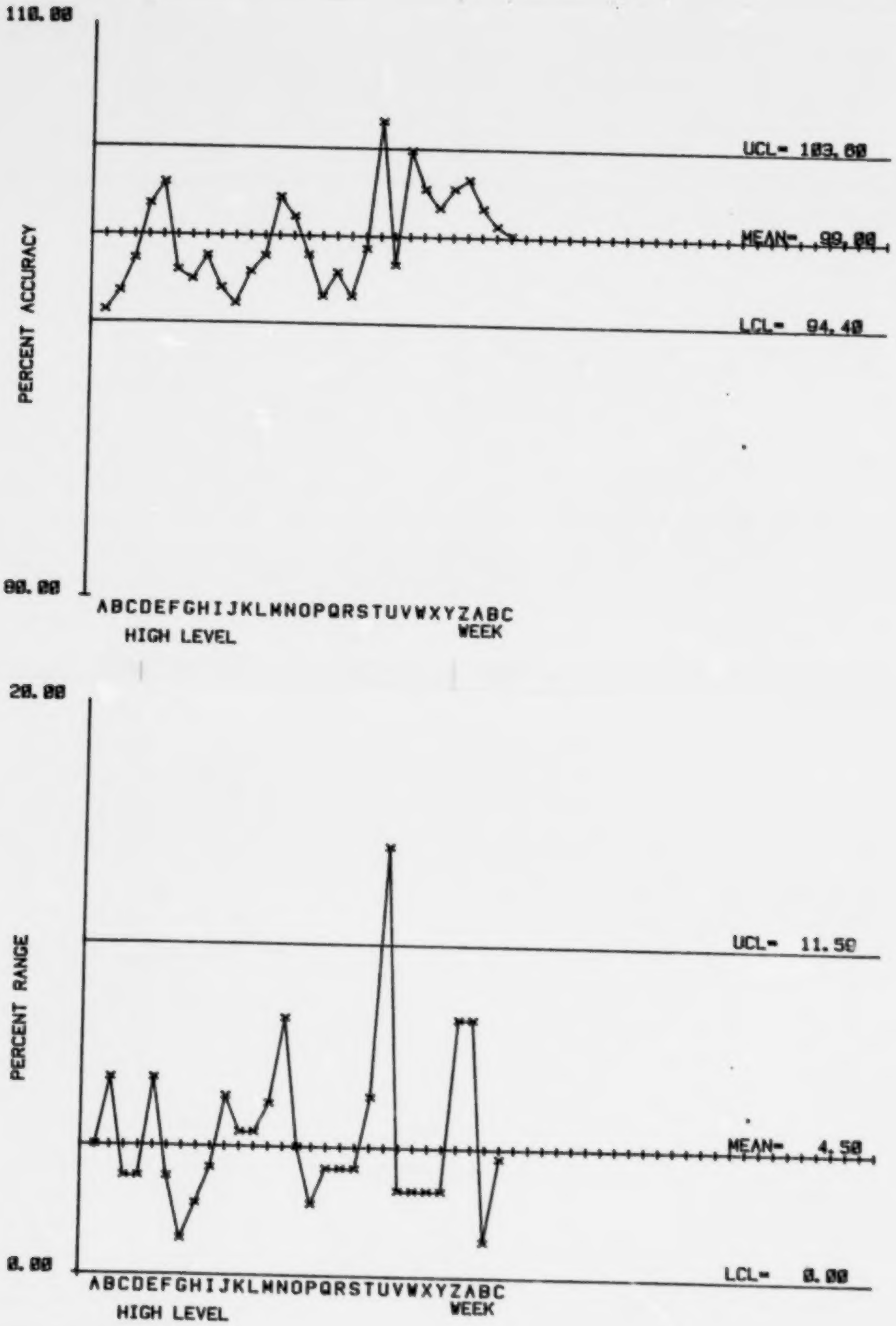

Figure 2-12. 1978 mean and range control charts (high level NO_3^-).

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For example, the maximum sulfate value for Birmingham, Alabama, in 1978 was 25.1 µg/m^3. In Table 2-4, the bias is -5.5% and the coefficient of variation for precision is 4.0%, so the resulting confidence limits are:

$$L_u = 25.1[1-(-5.5)/100 + (1.96)(4.0)/100] = 28.4 \qquad (8a)$$

$$L_\ell = 25.1[1-(-5.5)/100 - (1.96)(4.0)/100] = 24.5 \qquad (8b)$$

It is emphasized that estimates determined by the above formulae consider only variability from sample preparation (i.e., cutting and extraction) and sample analysis. Also, it is assumed the bias is constant, and the inherent variability due to sample preparation and sample analysis remains unchanged. Furthermore, if additional information were known concerning variation due to factors such as flow rate or other variables of sampling, then these confidence intervals would be wider. As a result, all confidence limits are underestimates of the variability of the total measurement process, including sampling and analysis.

Estimates of bias and precision for 1977 and 1978 analytical results are summarized in Table 2-4. Corresponding values for previous years are presented in earlier reports.

TABLE 2-4. ANALYTICAL PRECISION AND BIAS

	Ion	Concentration Range (µg/m^3)	Bias (%)	Precision (%)
A. 1977	Nitrate	<3	+0.7	12
		3-6	-5.6	8
		>6	-2.8	8
	Sulfate	<6	-6.8	9
		6-20	-5.3	5
		>20	-5.9	3
B. 1978	Nitrate	<3	+6.8	21
		3-6	-4.5	11
		>6	-1.2	24
	Sulfate	<6	-7.3	11
		6-20	-3.7	9
		>20	-5.5	4

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SECTION 4

NATIONAL SUMMARY OF AIR QUALITY MEASUREMENTS

Data presented in Tables 4-1 and 4-2 are annual cumulative frequency distributions by ion of individual results for urban and nonurban locations. In the first line of Table 4-1, the number, 3900, is the number of valid 24-hour samples analyzed for nitrate in 1971. The next entry is the minimum value detected that year, and "LD" means below the minimum detectable level of the instrument. The next seven entries are the 10 through 99 percentile values. For example, the 90 percentile value of 5.02 indicates that 90 percent of the 3900 values; i.e., 0.90 x 3900 = 3510, were equal to or less than 5.02 μg/m^3. The next entry is the maximum annual value. Arithmetic means and standard deviations, and geometric means and geometric standard deviations are presented in the last four columns in the table. Comparison among years for a given pollutant provides a relative indication of national trends. Nitrate ion concentrations, for example, have apparently increased over the eight-year period in both urban and nonurban areas, while sulfate ion concentrations have remained relatively consistent.

Since typical levels of these pollutants, especially sulfates, may be geographically dependent, the national frequency distribution is not helpful for judging the localized contribution and relative severity of these pollutants for an individual site. Therefore, local site analyses should be performed with data from surrounding sites within the same general geographical area. Data for each site are presented in Section 5. Also, some of the variability from year to year in the national summary tables may be attributed to different sets of sites being used in the summarization, depending upon the completeness criteria for valid data as described in Section 5.

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TABLE 4-1. URBAN NATIONAL CUMULATIVE FREQUENCY DISTRIBUTIONS

		Number of		Percent of time concentration ($\mu g/m^3$) is equal to or less than								Arithmetic statistics		Geometric statistics	
Ion	Year	Samples	Min.	10	30	50	70	90	95	99	Max.	Mean	Std. Dev.	Mean	Std. Dev.
NO_3^-	1971	3900	LD	0.69	1.55	2.29	3.22	5.02	6.48	11.85	26.17	2.77	2.30	2.13	2.06
	1972	5519	LD	0.66	1.58	2.47	3.55	5.90	7.88	13.50	24.99	3.05	2.61	2.32	2.10
	1973	4775	LD	0.81	1.71	2.58	3.65	6.24	8.31	14.61	37.36	3.25	2.87	2.44	2.13
	1974	4562	LD	0.83	1.74	2.54	3.63	6.46	8.62	17.50	54.89	3.36	3.40	2.36	2.32
	1975	4113	0.20	0.96	2.00	2.91	4.12	7.18	9.90	17.07	33.71	3.73	3.31	2.79	2.15
	1976	3817	0.08	1.07	1.99	2.80	3.83	6.48	9.53	20.65	43.16	3.71	3.83	2.58	2.34
	1977	4531	0.07	1.07	2.09	2.99	4.15	6.76	10.40	20 63	97.67	3.89	3.97	2.87	2.18
	1978	3610	LD	1.08	2.21	3.24	4.56	7.78	11.18	22.91	56.96	4.22	4.10	3.07	2.26
$SO_4^=$	1971	3916	LD	3.4	5.7	8.0	10.9	18.0	22.0	33.5	69.2	9.6	6.8	7.84	1.89
	1972	5519	LD	3.9	6.7	9.4	12.7	20.3	25.4	37.9	75.9	11.1	7.7	9.15	1.87
	1973	4774	LD	3.9	6.3	8.1	10.9	17.5	22.7	35.4	162.0	9.9	7.0	8.06	1.89
	1974	4564	LD	3.9	6.3	8.3	11.3	17.9	22.8	34.8	69.1	10.0	6.7	8.34	1.83
	1975	4110	0.2	3.5	6.1	8.3	11.5	18.1	23.8	35.8	72.6	10.0	7.0	8.22	1.88
	1976	3871	0.2	3.1	5.4	7.4	9.9	16.5	20.0	29.2	66.7	8.8	5.8	7.33	1.83
	1977	4531	0.7	3.1	5.7	7.6	10.3	17.1	20.9	29.9	76.4	9.1	6.1	7.44	1.72
	1978	3610	LD	3.1	5.7	7.8	10.6	16.6	20.4	34.5	228.4	9.4	7.5	7.55	1.95

TABLE 4-2. NONURBAN NATIONAL CUMULATIVE FREQUENCY DISTRIBUTIONS

Ion	Year	Number of Samples	Min.	Percent of time concentration ($\mu g/m^3$) is equal to or less than							Max.	Arithmetic statistics		Geometric statistics	
				10	30	50	70	90	95	99		Mean	Std. Dev.	Mean	Std. Dev.
NO_3^-	1971	671	LD	0.06	0.31	0.71	1.20	2.19	2.67	3.81	6.04	0.95	0.92	0.68	2.26
	1972	928	LD	LD	0.15	0.50	1.01	2.08	2.59	4.19	6.59	0.79	0.92	0.52	2.52
	1973	831	LD	0.04	0.28	0.71	1.26	2.35	2.83	4.47	6.67	0.99	1.02	0.69	2.34
	1974	706	LD	0.12	0.37	0.83	1.37	2.52	3.16	5.13	6.65	1.10	1.07	0.79	2.25
	1975	630	0.20	0.20	0.20	0.73	1.41	2.74	3.28	4.85	11.85	1.13	1.16	0.78	2.35
	1976	467	LD	0.10	0.36	0.82	1.51	2.82	3.54	4.73	6.15	1.18	1.16	0.84	2.27
	1977	681	LD	0.17	0.55	1.05	1.81	3.07	3.84	5.22	11.57	1.39	1.26	0.85	3.21
	1978	458	LD	0.30	0.59	1.07	2.03	3.77	4.74	8.09	11.77	1.69	1.72	1.06	2.78
$SO_4^=$	1971	686	0.4	1.5	3.0	4.7	7.2	11.8	15.5	23.6	35.4	6.0	4.9	4.7	2.03
	1972	929	LD	1.4	2.9	5.2	7.8	13.7	17.4	24.8	42.7	6.6	5.4	5.1	2.05
	1973	831	LD	1.3	2.7	4.4	6.3	12.0	17.0	29.8	53.2	6.0	5.9	4.2	2.29
	1974	706	0.1	1.4	2.6	4.8	7.2	12.2	16.6	27.0	90.0	6.2	6.2	4.4	2.30
	1975	630	0.2	0.7	2.1	4.0	6.4	11.6	15.2	28.7	48.3	5.5	5.7	3.8	2.36
	1976	493	0.2	0.9	1.8	4.0	6.5	11.3	13.9	21.3	36.3	5.3	4.9	3.8	2.22
	1977	681	LD	1.2	2.5	4.7	7.4	12.8	17.1	24.6	43.3	6.1	5.4	4.0	2.72
	1978	458	LD	1.2	3.0	4.9	7.2	13.4	17.0	21.0	38.5	6.2	5.3	4.2	2.71

SECTION 5

DATA TABLES

Data are arranged by urban and nonurban sites. Each monitoring site is assigned a unique code number as described in the SAROAD Station Coding Manual.[8]

The data are presented in the same format as previously described for national summaries. Values are expressed in micrograms of pollutant per cubic meter of air. Data are judged to be valid (i.e., representative of an annual sample) if there were at least five valid samples obtained each quarter of the year. In addition, when no samples were collected during one month of a quarter, at least two valid samples must have been collected during the other two months to validate the data. In order to provide a more comprehensive data summary, some data which are not valid, as identified by an asterisk following the year, are presented if the following three conditions were satisfied:

1. A total of at least 15 samples were collected that year

2. Data for at least two quarters were valid

3. At least one sample was obtained in each of the other two quarters

The minimum detectable concentrations for nonmetallic inorganic ions are presented in Table 2-1. Values below the analytical limits of detection or determination are reported as "LD's" in the data tables, and a yearly mean is calculated by replacing the LD's with a value equal to one-half the value of the LD. If more than 25 percent of the individual values during a year are below the lower analytical limits, the summary statistics are not calculated. When more than 50 percent of the individual results during a year are below the lower analytical limits, only the minimum, maximum, and number of results below the LD are shown.

Data table headings present the bias and precision information from Table 2-4. For example, the headings for 1978 sulfate include the following:

ANALYTICAL QUALITY

Conc. Range ($\mu g/m^3$)	Bias (%)	Precision (%)
<6.0	-7.3	11
6→20	-3.7	9
>20	-5.5	4

The bias and precision values can be used in Equations (7a) and (7b) to compute approximate upper and lower 95 percent confidence limits on the true concentration for a given reported concentration. For instance, the approximate confidence limits for a reported sulfate concentration of 8.4 $\mu g/m^3$ would be:

$$\begin{aligned} L_u &= X(1-B/100 + 1.96\ C_v/100) \qquad (7a) \\ &= 8.4[1-(-3.7)/100 + 1.96(9)/100] \\ &= 10.2\ \mu g/m^3 \end{aligned}$$

$$\begin{aligned} L_\ell &= X(1-B/100 - 1.96\ C_v/100) \qquad (7b) \\ &= 8.4[1-(-3.7)/100 - 1.96(9)/100] \\ &= 7.2\ \mu g/m^3 \end{aligned}$$

Thus, the interval between 7.2 $\mu g/m^3$ and 10.2 $\mu g/m^3$ would be expected to include the true value with a confidence level of about 95 percent.

POLLUTANT - 12306 - NITRATE　　URBAN
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)　　NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ALABAMA										
BIRMINGHAM										
010380003A01	77	25	1.01	1.63	2.20	3.10	3.29	3.61	3.70	4.73
GADSDEN										
011480001A01	77	25	1.02	1.33	2.07	2.23	2.41	2.85	2.91	3.09
HUNTSVILLE										
011860001A01	77	27	1.04	1.56	1.95	2.25	2.54	3.00	3.23	3.52
MOBILE										
012380001A01	77*	19	.90	1.04	1.66	2.13	2.50	3.25	3.66	4.38
MONTGOMERY										
012460001A01	77*	20	.78	.93	1.58	2.03	2.08	2.25	2.84	2.86
ALASKA										
ANCHORAGE										
020040003A01	77*	18	.11	.22	.43	.53	.64	.69	.69	1.29
FAIRBANKS										
020160001A01	77*	25	.14	.26	.38	.51	.54	.68	.85	1.35
ARIZONA										
DOUGLAS										
030240004A01	77*	25	.52	.68	.99	1.22	1.28	1.47	1.85	1.98
PHOENIX										
030600002A01	77*	20	1.28	1.97	2.97	3.81	4.33	4.83	5.14	6.00
TUCSON										
030860001A01	77	30	1.23	1.47	1.95	2.83	3.09	3.30	3.86	4.09
CALIFORNIA										
ANAHEIM										
050230001A01	77	30	1.80	2.52	7.77	10.36	11.56	15.19	19.32	22.52
BERKELEY										
050740001A01	77	30	.65	1.52	2.32	2.74	3.49	3.91	7.52	9.84
BURBANK										
050900002A01	77	30	1.23	1.96	7.52	10.23	10.85	13.36	16.46	18.30
FRESNO										
052800002A01	77	30	2.07	4.94	6.84	9.09	9.75	10.56	17.38	20.08
LONG BEACH										
054100001A01	77	27	.89	2.73	4.87	7.13	11.43	13.14	15.68	16.16
LOS ANGELES										
054180001A01	77	30	2.60	4.07	9.57	14.52	16.64	19.33	20.85	21.94

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
ALABAMA									
BIRMINGHAM 010380003A01	77	25	5.01	5.70	5.70	3.008	1.181	2.775	1.528
GADSDEN 011480001A01	77	25	4.12	4.19	4.19	2.352	.799	2.218	1.431
HUNTSVILLE 011860001A01	77	27	4.98	4.98	6.97	2.659	1.220	2.449	1.494
MOBILE 012380001A01	77*	19	4.45	4.76	4.76	2.560	1.236	2.271	1.675
MONTGOMERY 012460001A01	77*	20	3.28	4.29	4.29	2.087	.839	1.930	1.515
ALASKA									
ANCHORAGE 020040003A01	77*	18	1.54	2.13	2.13	.694	.499	.561	1.981
FAIRBANKS 020160001A01	77*	25	1.49	1.54	1.54	.631	.398	.532	1.812
ARIZONA									
DOUGLAS 030240004A01	77*	25	2.06	2.61	2.61	1.305	.517	1.210	1.494
PHOENIX 030600002A01	77*	20	6.04	7.17	7.17	3.996	1.539	3.677	1.557
TUCSON 030860001A01	77	30	4.45	4.45	4.56	2.782	1.007	2.595	1.479
CALIFORNIA									
ANAHEIM 050230001A01	77	30	34.20	34.20	38.27	12.806	8.854	10.074	2.115
BERKELEY 050740001A01	77	30	12.85	12.85	15.13	4.609	3.869	3.441	2.151
BURBANK 050900002A01	77	30	21.63	21.63	21.81	10.820	5.887	8.758	2.132
FRESNO 052800002A01	77	30	21.58	21.58	21.77	10.915	5.709	9.540	1.723
LONG BEACH 054100001A01	77	27	18.19	18.19	19.94	9.348	5.579	7.348	2.223
LOS ANGELES 054180001A01	77	30	22.46	22.46	24.84	14.471	6.543	12.540	1.835

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
CALIFORNIA										
OAKLAND 055300001A01	77	29	.80	1.27	2.37	2.83	3.03	3.74	5.56	8.14
ONTARIO 055380001A01	77	30	4.59	7.22	12.82	14.87	18.09	21.34	23.54	24.44
PASADENA 055760002A01	77	29	1.37	2.26	8.27	10.92	11.25	13.40	15.73	17.94
SACRAMENTO 056580001A01	77	30	1.20	2.55	3.36	4.12	4.73	5.29	6.75	11.34
SAN BERNARDINO 056680001A01	77	29	1.25	1.91	11.31	18.17	18.92	21.28	25.39	25.85
SAN DIEGO 056800004A01	77	30	1.46	2.18	5.21	6.77	9.06	10.80	11.44	12.31
SAN FRANCISCO 056860001A01	77	30	.63	.74	1.25	1.89	2.23	2.84	4.30	5.80
SAN JOSE 056980004A01	77	30	1.21	1.97	3.41	4.93	6.38	8.74	11.21	14.86
SANTA ANA 057180001A01	77	29	1.88	2.48	7.47	9.11	10.37	14.38	17.04	17.62
TORRANCE 058260001A01	77	29	1.30	2.73	4.70	5.90	9.33	11.67	15.03	16.66
CONNECTICUT										
HARTFORD 070420002A01	77*	16	1.55	1.83	2.67	3.97	4.52	4.73	5.03	5.89
NEW HAVEN 070700001A01	77*	15	1.66	2.03	2.12	3.45	4.11	4.46	4.66	5.54
WATERBURY 071240123A01	77*	26	1.06	1.73	2.34	3.28	3.67	4.12	4.48	5.36
DELAWARE										
NEWARK 080140001A01	77*	25	1.09	2.24	3.96	4.15	4.90	5.11	5.58	6.36
WILMINGTON 080260002A01	77*	22	2.32	3.40	4.29	4.73	5.16	5.48	5.82	8.46
FLORIDA										
JACKSONVILLE 101960002A01	77	28	1.07	1.36	1.73	2.55	2.67	3.15	3.35	3.85

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

						ARITHMETIC		GEOMETRIC	
SITE:	YR	NO.	95	98	MAX	MEAN	STDEV	MEAN	STD
CALIFORNIA									
OAKLAND									
055300001A01	77	29	10.46	10.46	17.24	4.209	3.589	3.221	2.056
ONTARIO									
055380001A01	77	30	66.46	66.46	97.67	20.084	18.432	15.892	1.908
PASADENA									
055760002A01	77	29	22.09	22.09	24.88	11.142	5.902	9.183	2.064
SACRAMENTO									
056580001A01	77	30	12.63	12.63	13.30	5.377	3.322	4.577	1.769
SAN BERNARDINO									
056680001A01	77	29	30.54	30.54	42.58	16.650	10.069	12.409	2.530
SAN DIEGO									
056800004A01	77	30	17.83	17.83	18.74	8.002	4.599	6.535	2.020
SAN FRANCISCO									
056860001A01	77	30	9.56	9.56	11.99	2.952	2.748	2.115	2.235
SAN JOSE									
056980004A01	77	30	16.33	16.33	16.61	6.869	4.775	5.378	2.082
SANTA ANA									
057180001A01	77	29	22.83	22.83	30.63	11.121	6.745	9.057	2.019
TORRANCE									
058260001A01	77	29	20.19	20.19	20.81	9.080	5.928	7.178	2.083
CONNECTICUT									
HARTFORD									
070420002A01	77*	16	6.22	7.12	7.12	3.974	1.653	3.628	1.580
NEW HAVEN									
070700001A01	77*	15	5.54	6.01	6.01	3.601	1.422	3.326	1.527
WATERBURY									
071240123A01	77*	26	5.58	5.58	6.99	3.456	1.482	3.140	1.587
DELAWARE									
NEWARK									
080140001A01	77*	25	8.04	10.74	10.74	4.568	2.025	4.130	1.622
WILMINGTON									
080260002A01	77*	22	10.28	13.52	13.52	5.440	2.477	5.043	1.462
FLORIDA									
JACKSONVILLE									
101960002A01	77	28	4.17	4.17	4.69	2.566	.979	2.381	1.499

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
FLORIDA										
MIAMI 102700002A01	77*	20	.83	.84	1.04	1.56	1.71	2.15	2.50	2.99
TAMPA 104360002A01	77*	26	1.22	1.34	2.03	2.34	2.71	2.94	3.79	4.33
GEORGIA										
ATLANTA 110200001A01	77	27	1.19	1.55	2.17	3.01	3.20	3.38	3.95	4.30
COLUMBUS 111280001A01	77	28	.85	1.25	1.78	2.02	2.20	2.60	2.97	3.09
SAVANNAH 114500001A01	77*	18	.79	1.17	1.68	1.98	2.18	2.76	2.82	3.15
HAWAII										
HONOLULU 120120001A01	77	29	.07	.13	.23	.39	.39	.49	.90	1.16
IDAHO										
BOISE CITY 130220001A01	77	28	.76	1.00	1.43	1.65	2.02	2.19	2.59	4.29
ILLINOIS										
BLUE ISLAND 140500001A01	77*	17	1.42	1.96	2.99	5.00	5.02	5.70	6.34	6.40
CHICAGO 141220001A01	77*	18	.98	1.35	2.99	4.14	4.35	4.59	4.78	6.22
MOLINE 145120001A01	77*	23	1.29	2.10	3.11	3.59	3.85	4.22	4.32	6.01
NORTH CHICAGO 145620002A01	77*	23	1.11	1.14	2.47	3.04	3.25	3.72	4.81	7.87
PEORIA 146080001A01	77*	22	1.13	1.27	3.07	3.67	3.94	4.15	5.20	6.20
ROCK ISLAND 146700001A01	77*	21	1.94	2.01	3.37	4.46	4.64	5.19	5.78	8.12
INDIANA										
EAST CHICAGO 151180001A01	77*	24	.91	1.10	3.50	4.47	4.93	5.32	6.33	7.24
EVANSVILLE 151300001A01	77*	18	.23	.38	1.50	4.04	5.25	5.42	5.48	6.63

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
FLORIDA									
MIAMI									
102700002A01	77*	20	3.52	5.14	5.14	1.876	1.089	1.636	1.691
TAMPA									
104360002A01	77*	26	4.46	4.46	4.71	2.647	1.081	2.441	1.513
GEORGIA									
ATLANTA									
110200001A01	77	27	4.56	4.56	6.31	3.007	1.177	2.789	1.495
COLUMBUS									
111280001A01	77	28	3.88	3.88	4.02	2.235	.797	2.099	1.444
SAVANNAH									
114500001A01	77*	18	3.81	4.04	4.04	2.258	.863	2.099	1.500
HAWAII									
HONOLULU									
120120001A01	77	29	1.48	1.48	1.56	.535	.446	.383	2.339
IDAHO									
BOISE CITY									
130220001A01	77	28	4.54	4.54	8.92	2.252	1.653	1.902	1.731
ILLINOIS									
BLUE ISLAND									
140500001A01	77*	17	8.04	10.75	10.75	4.811	2.371	4.247	1.712
CHICAGO									
141220001A01	77*	18	7.69	8.25	8.25	4.228	1.920	3.754	1.723
MOLINE									
145120001A01	77*	23	6.05	6.14	6.14	3.796	1.332	3.559	1.464
NORTH CHICAGO									
145620002A01	77*	23	11.41	11.61	11.61	3.995	2.898	3.260	1.885
PEORIA									
146080001A01	77*	22	6.21	6.96	6.96	3.795	1.571	3.437	1.629
ROCK ISLAND									
146700001A01	77*	21	11.98	20.66	20.66	5.410	4.185	4.512	1.772
INDIANA									
EAST CHICAGO									
151180001A01	77*	24	7.90	13.93	13.93	4.892	2.658	4.209	1.830
EVANSVILLE									
151300001A01	77*	18	6.80	10.28	10.28	4.168	2.557	3.032	2.754

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
INDIANA										
FORT WAYNE 151380003A01	77*	23	1.73	1.79	3.11	4.52	4.87	5.61	5.97	7.51
GARY 151520001A01	77*	26	.79	2.19	3.36	4.13	4.32	5.04	5.58	6.51
HAMMOND 151780002A01	77*	20	1.88	1.92	3.93	4.54	4.73	5.82	8.15	8.27
INDIANAPOLIS 152040002A01	77	27	.33	2.43	3.02	4.15	4.73	6.35	6.75	8.11
NEW ALBANY 152980002A01	77*	24	.67	1.47	2.36	3.07	3.65	4.23	4.85	6.68
SOUTH BEND 153880002A01	77*	27	.69	1.56	3.33	4.26	4.46	4.87	5.47	5.98
TERRE HAUTE 154080001A01	77*	26	.50	2.06	2.97	3.75	4.12	4.91	5.59	6.06
IOWA										
CEDAR RAPIDS 160640018A01	77*	15	1.02	1.24	2.62	4.04	4.61	5.07	5.12	8.74
KANSAS										
KANSAS CITY 171800015A01	77	30	.78	1.09	2.21	2.90	3.10	3.46	4.45	5.29
TOPEKA 173560001A01	77*	24	.59	1.06	1.53	2.05	2.56	3.13	3.20	3.91
WICHITA 173740001A01	77*	15	.51	.93	1.78	2.84	3.19	3.64	3.72	3.74
KENTUCKY										
ASHLAND 180080002A01	77*	17	.90	1.03	1.43	2.37	2.42	3.04	3.52	4.01
BOWLING GREEN 180320001A01	77*	22	.36	.61	1.78	2.24	2.53	2.84	3.24	3.78
COVINGTON 180800001A01	77	28	.38	.84	1.91	2.91	3.21	3.47	3.65	4.15
LEXINGTON 182300001A01	77*	23	.23	.37	2.27	3.53	3.60	3.87	4.49	5.24
LOUISVILLE 182380002A01	77	26	.25	.69	2.70	3.18	3.54	3.66	3.92	4.41

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC		GEOMETRIC	
						MEAN	STDEV	MEAN	STD
INDIANA									
FORT WAYNE									
151380003A01	77*	23	9.27	9.38	9.38	4.676	2.233	4.178	1.639
GARY									
151520001A01	77*	26	8.33	8.33	9.39	4.402	2.025	3.874	1.773
HAMMOND									
151780002A01	77*	20	9.11	9.85	9.85	5.227	2.376	4.713	1.615
INDIANAPOLIS									
152040002A01	77	27	9.11	9.11	11.40	4.910	2.517	4.163	1.974
NEW ALBANY									
152980002A01	77*	24	6.75	6.93	6.93	3.522	1.742	3.088	1.741
SOUTH BEND									
153880002A01	77*	27	6.53	6.53	9.48	4.295	1.785	3.854	1.701
TERRE HAUTE									
154080001A01	77*	26	6.48	6.48	6.61	3.904	1.651	3.445	1.795
IOWA									
CEDAR RAPIDS									
160640018A01	77*	15	8.74	8.92	8.92	4.202	2.493	3.480	1.958
KANSAS									
KANSAS CITY									
171800015A01	77	30	7.02	7.02	7.38	3.151	1.671	2.727	1.769
TOPEKA									
173560001A01	77*	24	3.99	4.19	4.19	2.305	1.061	2.052	1.675
WICHITA									
173740001A01	77*	15	3.74	5.07	5.07	2.671	1.289	2.295	1.882
KENTUCKY									
ASHLAND									
180080002A01	77*	17	4.92	5.56	5.56	2.588	1.377	2.254	1.740
BOWLING GREEN									
180320001A01	77*	22	4.15	4.91	4.91	2.428	1.098	2.125	1.818
COVINGTON									
180800001A01	77	28	4.47	4.47	5.45	2.796	1.225	2.435	1.844
LEXINGTON									
182300001A01	77*	23	5.27	9.92	9.92	3.309	2.078	2.513	2.481
LOUISVILLE									
182380002A01	77	26	4.85	4.85	5.96	3.072	1.326	2.593	2.079

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
LOUISIANA										
BATON ROUGE 190280002A01	77	26	1.21	1.36	1.65	2.10	2.44	2.60	3.23	3.58
IBERVILLE PAR 191280002A01	77	24	.82	.84	1.66	2.35	2.64	3.04	3.85	5.63
NEW ORLEANS 192020002A01	77	26	1.26	1.31	1.98	2.57	3.18	3.27	3.74	3.87
MAINE										
PORTLAND 200960004A01	77	25	.33	.44	1.03	1.35	1.83	2.23	2.48	2.85
MARYLAND										
BALTIMORE 210120001A01	77*	26	2.74	3.22	4.31	4.83	5.05	5.21	5.77	5.97
MASSACHUSETTS										
WORCHESTER 222640004A01	77	23	.75	.76	1.56	2.19	2.44	2.85	2.96	3.73
MICHIGAN										
DETROIT 231180001A01	77*	23	1.27	2.33	4.31	5.10	5.37	5.89	6.47	8.96
FLINT 231580008A01	77*	16	1.94	2.42	3.37	3.61	3.86	3.96	5.67	6.66
GRAND RAPIDS 231820001A01	77*	22	.55	1.17	3.79	5.44	5.55	5.87	7.99	8.92
LANSING 232840001A01	77*	22	.61	1.37	2.73	3.38	3.56	4.33	6.25	7.87
SAGINAW 234760001A01	77	25	.98	1.74	3.60	4.03	4.24	4.82	6.14	7.26
TRENTON 235120004A01	77*	21	1.97	2.26	4.09	5.05	5.39	5.83	5.86	6.73
MINNESOTA										
DULUTH 241040001A01	77*	25	.37	.50	1.06	1.47	1.93	2.32	2.59	3.38
MINNEAPOLIS 242260027A01	77	24	.63	.82	1.42	3.35	3.61	4.21	5.15	6.14
ST PAUL 243300031A01	77*	24	.37	1.14	1.94	2.99	3.39	4.08	5.22	6.88

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
LOUISIANA									
BATON ROUGE 190280002A01	77	26	3.73	3.73	5.35	2.337	.996	2.160	1.488
IBERVILLE PAR 191280002A01	77	24	6.03	6.47	6.47	2.784	1.608	2.382	1.780
NEW ORLEANS 192020002A01	77	26	4.73	4.73	5.93	2.825	1.185	2.593	1.535
MAINE									
PORTLAND 200960004A01	77	25	4.40	6.05	6.05	1.791	1.302	1.414	2.061
MARYLAND									
BALTIMORE 210120001A01	77*	26	6.45	6.45	6.71	4.756	1.090	4.627	1.277
MASSACHUSETTS									
WORCHESTER 222640004A01	77	23	4.11	5.12	5.12	2.323	1.106	2.066	1.674
MICHIGAN									
DETROIT 231180001A01	77*	23	13.68	20.63	20.63	6.097	4.021	5.229	1.744
FLINT 231580008A01	77*	16	6.96	14.45	14.45	4.622	2.961	4.081	1.604
GRAND RAPIDS 231820001A01	77*	22	11.12	12.30	12.30	5.407	3.125	4.317	2.189
LANSING 232840001A01	77*	22	12.20	13.96	13.96	4.471	3.307	3.564	2.017
SAGINAW 234760001A01	77	25	9.25	10.30	10.30	4.472	2.330	3.875	1.781
TRENTON 235120004A01	77*	21	10.14	12.69	12.69	5.324	2.417	4.878	1.535
MINNESOTA									
DULUTH 241040001A01	77*	25	4.47	22.54	22.54	2.580	4.291	1.593	2.382
MINNEAPOLIS 242260027A01	77	24	6.80	11.85	11.85	3.497	2.537	2.730	2.104
ST PAUL 243300031A01	77*	24	6.92	12.79	12.79	3.667	2.661	2.890	2.107

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POLLUTANT - 12306 - NITRATE                                  URBAN
METHOD - 92 - HI-VOL  REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)                               NO3


SITE:           YR    NO.   MIN     10      30      50      60      70      80      90

MISSISSIPPI
 JACKSON
 251260002A01   77    26   1.05    1.56    1.97    2.26    2.59    2.75    2.96    3.15

MISSOURI
 ST LOUIS
 264280001A01   77    27    .55    1.79    2.68    3.33    3.57    3.67    4.70    5.21

 ST LOUIS
 264280072A01   77*   20   1.08    1.51    2.62    3.00    3.09    3.44    4.06    4.78

MONTANA
 HELENA
 270720001A01   77*   20    .35     .49     .76     .93    1.06    1.13    1.31    1.46

NEBRASKA
 LINCOLN
 281560002A01   77    28    .61     .77    1.27    2.49    3.16    3.80    4.18    4.86

 OMAHA
 281880034A01   77*   17   1.38    1.44    2.11    2.95    3.02    3.90    4.59    4.63

NEVADA
 LAS VEGAS
 290320001A01   77    27    .47    1.13    2.10    3.28    3.38    3.86    4.57    4.76

 RENO
 290480001A01   77*   23    .42     .59    2.06    2.83    2.98    3.28    3.54    4.46

NEW HAMPSHIRE
 CONCORD
 300120002A01   77*   18    .50     .58    1.21    1.85    2.17    2.22    2.23    2.84

NEW JERSEY
 BAYONNE
 310180001A01   77    29   1.05    1.85    2.88    3.84    4.08    4.34    4.88    5.03

 CAMDEN
 310720001A01   77*   21   2.76    2.91    3.65    4.14    5.21    5.23    5.70    6.44

 CAMDEN CO
 310740003A01   77*   24    .58     .93    2.04    2.97    3.19    3.61    3.80    5.44

 GLASSBORO
 311700001A01   77*   21   1.33    1.91    2.08    2.84    3.31    3.58    3.94    5.68

 JERSEY CITY
 312320001A01   77*   23    .76    1.44    1.96    2.83    3.60    3.97    4.48    4.89

* INDICATES YEARLY CRITERIA NOT MET
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POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
MISSISSIPPI									
JACKSON 251260002A01	77	26	3.41	3.41	4.43	2.390	.746	2.277	1.381
MISSOURI									
ST LOUIS 264280001A01	77	27	6.07	6.07	6.70	3.438	1.460	3.075	1.705
ST LOUIS 264280072A01	77*	20	5.37	8.65	8.65	3.286	1.663	2.955	1.603
MONTANA									
HELENA 270720001A01	77*	20	1.67	4.82	4.82	1.149	.932	.965	1.739
NEBRASKA									
LINCOLN 281560002A01	77	28	5.12	5.12	8.07	2.824	1.807	2.271	2.021
OMAHA 281880034A01	77*	17	4.63	5.63	5.63	3.125	1.289	2.866	1.551
NEVADA									
LAS VEGAS 290320001A01	77	27	4.88	4.88	5.84	3.106	1.450	2.664	1.887
RENO 290480001A01	77*	23	5.06	8.75	8.75	2.864	1.778	2.360	1.984
NEW HAMPSHIRE									
CONCORD 300120002A01	77*	18	2.91	3.41	3.41	1.815	.815	1.614	1.705
NEW JERSEY									
BAYONNE 310180001A01	77	29	5.33	5.33	7.63	3.730	1.399	3.452	1.527
CAMDEN 310720001A01	77*	21	6.93	7.08	7.08	4.624	1.340	4.443	1.337
CAMDEN CO 310740003A01	77*	24	5.64	6.76	6.76	3.024	1.503	2.627	1.795
GLASSBORO 311700001A01	77*	21	5.71	5.94	5.94	3.182	1.340	2.938	1.501
JERSEY CITY 312320001A01	77*	23	5.55	5.84	5.84	3.138	1.431	2.803	1.663

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN
NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
NEW JERSEY										
NEWARK 313480001A01	77*	21	1.68	2.05	2.90	3.32	3.75	3.94	5.00	6.16
PATERSON 314140001A01	77*	16	.48	1.63	4.32	4.62	4.80	4.85	5.28	5.86
PERTH AMBOY 314220001A01	77	27	.77	1.49	2.03	2.92	3.52	3.75	4.57	4.85
TRENTON 315400001A01	77*	19	.68	1.14	2.43	3.20	3.76	4.25	4.89	5.50
NEW MEXICO										
ALBUQUERQUE 320040001A01	77	25	1.01	1.21	1.61	2.09	2.32	2.44	2.77	3.48
NORTH CAROLINA										
CHARLOTTE 340700001A01	77	27	.20	.39	1.32	2.17	2.36	2.76	2.98	3.23
DURHAM 341160006A01	77	27	.47	1.09	1.59	2.33	2.38	2.51	2.88	3.21
GREENSBORO 341740009A01	77*	22	.41	.45	1.76	2.34	2.50	3.03	3.36	3.59
WINSTON-SALEM 344460002A01	77	29	.24	.71	1.19	2.07	2.50	2.64	2.84	3.06
OHIO										
AKRON 360060014A01	77	26	.82	1.49	2.62	2.95	3.48	4.22	4.47	4.80
CANTON 361000001A01	77*	27	.69	1.40	2.97	3.63	3.96	4.56	4.92	5.90
CINCINNATI 361220001A01	77	29	.94	1.33	2.56	3.10	3.62	3.88	4.92	5.48
CLEVELAND 361300001A01	77*	19	1.59	2.53	3.00	4.70	4.83	5.03	5.62	6.29
COLUMBUS 361460001A01	77	25	2.22	3.18	3.57	4.11	4.22	5.83	6.19	7.77
DAYTON 361660001A01	77	26	.47	1.70	2.55	3.20	4.06	4.42	5.78	6.86
MANSFIELD 363840008A01	77*	25	1.38	2.32	2.57	3.55	4.17	5.17	5.78	6.74

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC		GEOMETRIC	
						MEAN	STDEV	MEAN	STD
NEW JERSEY									
NEWARK									
313480001A01	77*	21	6.45	7.00	7.00	3.760	1.500	3.495	1.477
PATERSON									
314140001A01	77*	16	5.89	6.75	6.75	4.407	1.545	3.899	1.899
PERTH AMBOY									
314220001A01	77	27	4.96	4.96	7.98	3.151	1.611	2.760	1.725
TRENTON									
315400001A01	77*	19	5.51	7.73	7.73	3.469	1.829	2.945	1.890
NEW MEXICO									
ALBUQUERQUE									
320040001A01	77	25	4.73	4.93	4.93	2.303	1.029	2.112	1.520
NORTH CAROLINA									
CHARLOTTE									
340700001A01	77	27	3.42	3.42	3.51	2.033	1.048	1.623	2.222
DURHAM									
341160006A01	77	27	3.66	3.66	3.69	2.171	.840	1.981	1.609
GREENSBORO									
341740009A01	77*	22	3.65	4.17	4.17	2.247	1.199	1.817	2.124
WINSTON-SALEM									
344460002A01	77	29	3.64	3.64	4.73	2.017	1.084	1.659	2.056
OHIO									
AKRON									
360060014A01	77	26	6.81	6.81	7.74	3.439	1.703	3.026	1.718
CANTON									
361000001A01	77*	27	7.89	7.89	9.39	3.935	2.021	3.391	1.827
CINCINNATI									
361220001A01	77	29	6.34	6.34	8.56	3.508	1.769	3.078	1.718
CLEVELAND									
361300001A01	77*	19	6.62	7.19	7.19	4.490	1.555	4.200	1.484
COLUMBUS									
361460001A01	77	25	9.91	11.38	11.38	4.898	2.260	4.494	1.506
DAYTON									
361660001A01	77	26	9.07	9.07	12.95	4.150	2.684	3.415	1.959
MANSFIELD									
363840008A01	77*	25	7.73	10.31	10.31	4.184	2.110	3.742	1.614

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
OHIO										
PORTSMOUTH 365620002A01	77	27	.39	1.24	2.12	2.81	3.13	3.33	4.50	5.02
STEUBENVILLE 366420012A01	77*	21	1.21	2.05	2.64	3.54	3.86	4.36	4.69	6.00
TOLEDO 366600001A01	77*	24	2.28	2.33	3.00	3.79	4.25	4.79	5.91	7.62
YOUNGSTOWN 367760001A01	77	26	.70	2.24	2.91	3.88	4.67	4.95	5.05	6.56
OKLAHOMA										
TAHLEQUAH 372880480A01	77*	19	.26	.58	.96	1.26	1.29	1.72	1.94	2.00
TULSA 373000110A01	77	24	1.14	1.45	2.32	2.55	2.65	2.92	3.26	4.26
OREGON										
PORTLAND 381460001A01	77	28	.70	.87	1.36	1.81	2.26	2.66	2.86	3.17
PENNSYLVANIA										
ALLENTOWN 390120001A01	77*	25	1.68	1.88	2.86	4.19	4.38	4.83	5.51	6.09
ALTOONA 390140001A01	77*	18	1.05	1.91	2.74	3.03	3.30	4.01	4.22	4.86
BETHLEHEM 390780002A01	77*	22	1.40	1.75	3.84	4.12	4.24	4.48	4.96	5.37
ERIE 393060002A01	77*	21	1.19	1.60	3.60	4.36	4.54	4.77	6.09	7.29
HARRISBURG 393880361A01	77	30	1.80	2.56	3.24	4.21	4.41	4.79	5.88	7.61
HAZLETON 393960001A01	77	25	.59	.92	1.94	2.59	2.94	3.44	3.93	4.82
JOHNSTOWN 394460803A01	77*	22	1.95	2.47	3.17	3.47	3.68	3.95	4.09	5.43
LANCASTER CITY 394660002A01	77*	19	.97	2.15	3.19	4.08	4.22	4.36	4.86	5.91
PHILADELPHIA 397140004A01	77	28	1.31	2.27	3.28	4.03	4.67	4.84	5.25	6.16

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

						ARITHMETIC		GEOMETRIC	
SITE:	YR	NO.	95	98	MAX	MEAN	STDEV	MEAN	STD
OHIO									
PORTSMOUTH 365620002A01	77	27	5.43	5.43	6.33	3.017	1.481	2.610	1.830
STEUBENVILLE 366420012A01	77*	21	6.04	6.59	6.59	3.678	1.431	3.401	1.522
TOLEDO 366600001A01	77*	24	10.39	11.33	11.33	4.671	2.414	4.205	1.569
YOUNGSTOWN 367760001A01	77	26	7.76	7.76	9.35	4.173	1.958	3.674	1.758
OKLAHOMA									
TAHLEQUAH 372880480A01	77*	19	2.03	5.73	5.73	1.506	1.162	1.223	1.937
TULSA 373000110A01	77	24	4.36	5.42	5.42	2.780	.982	2.622	1.423
OREGON									
PORTLAND 381460001A01	77	28	3.38	3.38	4.35	2.035	.950	1.813	1.659
PENNSYLVANIA									
ALLENTOWN 390120001A01	77*	25	6.57	6.92	6.92	3.990	1.583	3.661	1.551
ALTOONA 390140001A01	77*	18	6.11	6.83	6.83	3.491	1.407	3.226	1.528
BETHLEHEM 390780002A01	77*	22	6.09	6.19	6.19	4.080	1.212	3.865	1.440
ERIE 393060002A01	77*	21	7.38	8.42	8.42	4.507	1.939	4.050	1.662
HARRISBURG 393880361A01	77	30	11.60	11.60	13.57	4.838	2.666	4.327	1.580
HAZLETON 393960001A01	77	25	5.34	5.42	5.42	2.814	1.362	2.451	1.784
JOHNSTOWN 394460803A01	77*	22	5.64	5.74	5.74	3.692	.980	3.573	1.301
LANCASTER CITY 394660002A01	77*	19	6.04	7.44	7.44	3.993	1.517	3.673	1.576
PHILADELPHIA 397140004A01	77	28	7.94	7.94	8.05	4.361	1.619	4.059	1.494

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
PENNSYLVANIA										
PITTSBURGH 397260001A01	77*	20	.44	1.46	3.58	4.38	4.89	5.21	5.86	7.79
READING 397620001A01	77	29	1.48	2.26	3.08	3.96	4.14	4.38	4.94	6.27
SCRANTON 398040001A01	77	28	1.41	1.59	2.37	3.18	3.66	3.99	4.81	5.35
WARMINSTER 399160002A01	77*	23	.82	.86	1.68	2.49	2.56	3.16	3.55	3.66
WEST CHESTER 399280110A01	77	30	2.83	2.86	3.76	4.20	4.41	4.83	5.61	7.15
WILKES-BARRE 399430001A01	77	30	1.17	1.83	2.64	3.07	3.45	3.65	3.86	4.87
YORK 399560322A01	77	30	1.52	2.58	3.39	3.71	4.10	4.87	5.46	7.36
PUERTO RICO										
GUAYANILLA CO 401100003A01	77*	23	.42	.57	.69	.95	.97	1.06	1.17	1.37
GUAYNABO CO 401140001A01	77	28	.48	.73	.88	1.11	1.17	1.26	1.31	1.47
PONCE 401920002A01	77*	24	.39	.48	.64	.87	.98	1.00	1.08	1.35
SABANA SECA 402065001A01	77*	26	.43	.81	.91	1.10	1.14	1.18	1.25	1.44
SAN JUAN CO 402160001A01	77*	24	.35	.42	.79	.91	1.00	1.07	1.27	1.40
RHODE ISLAND										
EAST PROVIDENC 410120001A01	77*	21	1.00	1.66	2.45	3.00	3.49	3.60	3.80	4.36
SOUTH CAROLINA										
GREENVILLE 421180001A01	77	27	.15	.60	1.52	1.72	2.10	2.30	2.67	3.02
SOUTH DAKOTA										
SIOUX FALLS 431480001A01	77*	20	.78	.79	1.50	2.07	2.47	2.99	3.45	3.84
TENNESSEE										
CHATTANOOGA 440380001A01	77	24	1.65	1.88	2.49	3.01	3.33	3.46	3.99	4.28

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
PENNSYLVANIA									
PITTSBURGH 397260001A01	77*	20	7.87	8.48	8.48	4.573	2.119	3.901	1.982
READING 397620001A01	77	29	7.39	7.39	8.89	4.104	1.657	3.800	1.498
SCRANTON 398040001A01	77	28	6.47	6.47	6.71	3.502	1.491	3.201	1.550
WARMINSTER 399160002A01	77*	23	3.87	4.95	4.95	2.439	1.158	2.143	1.733
WEST CHESTER 399280110A01	77	30	8.03	8.03	9.25	4.733	1.655	4.495	1.374
WILKES-BARRE 399430001A01	77	30	4.97	4.97	5.03	3.195	1.080	3.003	1.452
YORK 399560322A01	77	30	8.72	8.72	12.21	4.511	2.218	4.095	1.549
PUERTO RICO									
GUAYAMILLA CO 401100003A01	77*	23	1.48	1.49	1.49	.919	.310	.869	1.412
GUAYNABO CO 401140001A01	77	28	1.96	1.96	2.44	1.154	.403	1.092	1.400
PONCE 401920002A01	77*	24	1.36	1.49	1.49	.891	.304	.840	1.428
SABANA SECA 402065001A01	77*	26	2.19	2.19	2.23	1.125	.398	1.065	1.400
SAN JUAN CO 402160001A01	77*	24	1.58	2.54	2.54	1.022	.440	.943	1.507
RHODE ISLAND									
EAST PROVIDENC 410120001A01	77*	21	5.18	6.40	6.40	3.192	1.197	2.975	1.491
SOUTH CAROLINA									
GREENVILLE 421180001A01	77	27	4.17	4.17	4.57	1.938	1.061	1.570	2.181
SOUTH DAKOTA									
SIOUX FALLS 431480001A01	77*	20	4.08	6.47	6.47	2.400	1.424	2.032	1.833
TENNESSEE									
CHATTANOOGA 440380001A01	77	24	5.39	5.59	5.59	3.218	1.023	3.070	1.368

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
TENNESSEE										
KNOXVILLE 441740002A01	77*	22	.54	1.67	2.06	2.75	2.79	2.97	3.35	4.03
MEMPHIS 442340001A01	77*	15	1.69	1.73	2.47	2.70	2.70	2.93	3.02	4.57
NASHVILLE 442540001A01	77*	21	1.46	1.57	2.67	3.12	3.59	3.65	3.80	4.66
TEXAS										
AMARILLO 450070002A01	77*	21	.43	.56	.93	1.77	1.83	2.09	2.22	2.91
AUSTIN 450220010A01	77*	17	.77	1.30	1.61	1.73	1.95	2.31	2.83	3.10
BEAUMONT 450330001A01	77*	17	.99	1.07	1.33	2.03	2.07	2.34	3.67	3.69
CORPUS CHRISTI 451150001A01	77	26	.51	.74	1.05	1.58	1.69	1.95	2.68	3.69
DALLAS 451310002A01	77*	21	1.37	2.21	2.84	3.58	4.38	4.43	4.81	5.35
FORT WORTH 451880001A01	77	26	.97	1.86	2.73	3.40	3.80	3.96	5.02	5.68
HOUSTON 452560001A01	77*	15	2.00	2.34	2.57	3.21	3.39	4.64	4.95	6.70
LUBBOCK 453340001A01	77*	20	.80	.97	1.35	1.61	1.82	1.98	2.48	2.89
PASADENA 454060002A01	77*	27	1.04	1.47	2.14	2.84	2.91	3.66	4.00	5.08
SAN ANTONIO 454570034A01	77*	23	.91	1.00	1.58	2.10	2.41	2.79	3.57	4.29
WICHITA FALLS 455560002A01	77	29	.58	.98	1.50	1.93	2.10	2.29	2.71	3.11
UTAH										
OGDEN 460680001A01	77*	22	.64	.70	1.35	2.43	2.65	3.39	4.84	11.08
SALT LAKE CITY 460920001A01	77*	24	1.01	1.16	1.67	2.48	3.09	5.60	7.36	11.95
VERMONT										
BURLINGTON 470140003A01	77	26	.72	.89	1.44	2.27	2.76	3.14	3.47	3.97

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
TENNESSEE									
KNOXVILLE 441740002A01	77*	22	4.26	4.27	4.27	2.677	.911	2.488	1.549
MEMPHIS 442340001A01	77*	15	4.57	5.17	5.17	2.856	.923	2.737	1.343
NASHVILLE 442540001A01	77*	21	4.76	5.65	5.65	3.212	1.056	3.038	1.424
TEXAS									
AMARILLO 450070002A01	77*	21	3.34	4.31	4.31	1.712	.998	1.449	1.837
AUSTIN 450220010A01	77*	17	3.42	5.82	5.82	2.232	1.155	2.016	1.575
BEAUMONT 450330001A01	77*	17	4.21	6.35	6.35	2.356	1.406	2.053	1.686
CORPUS CHRISTI 451150001A01	77	26	4.60	4.60	5.46	1.946	1.315	1.598	1.888
DALLAS 451310002A01	77*	21	5.59	7.74	7.74	3.843	1.437	3.587	1.477
FORT WORTH 451880001A01	77	26	6.12	6.12	6.14	3.543	1.478	3.224	1.590
HOUSTON 452560001A01	77*	15	6.70	7.13	7.13	3.761	1.622	3.475	1.497
LUBBOCK 453340001A01	77*	20	3.05	3.09	3.09	1.832	.683	1.715	1.458
PASADENA 454060002A01	77*	27	6.80	6.80	8.00	3.124	1.661	2.765	1.649
SAN ANTONIO 454570034A01	77*	23	4.54	4.66	4.66	2.443	1.190	2.174	1.651
WICHITA FALLS 455560002A01	77	29	3.68	3.68	3.86	2.037	.849	1.858	1.575
UTAH									
OGDEN 460680001A01	77*	22	14.31	17.23	17.23	4.093	4.432	2.708	2.444
SALT LAKE CITY 460920001A01	77*	24	12.11	24.71	24.71	4.836	5.377	3.211	2.385
VERMONT									
BURLINGTON 470140003A01	77	26	4.60	4.60	4.77	2.408	1.221	2.086	1.773

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
VIRGINIA										
DANVILLE 480920001A01	77	29	.65	1.88	2.38	2.66	2.78	3.11	3.57	4.10
FAIRFAX CO 481060001A01	77*	27	.66	2.02	2.85	3.58	3.95	4.30	4.77	5.10
HAMPTON 481440001A01	77	30	1.78	2.35	2.92	3.68	4.15	4.89	5.60	5.88
LYNCHBURG 481840002A01	77	30	1.83	2.10	2.43	3.04	3.11	3.27	3.59	4.17
NORFOLK 482140001A01	77*	26	1.36	1.88	2.88	3.12	3.61	3.99	4.42	4.75
PORTSMOUTH 482440001A01	77*	26	.93	1.49	2.49	2.93	3.20	3.63	3.87	4.72
RICHMOND 482660002A01	77*	26	.42	1.64	2.36	2.86	3.51	3.75	4.08	4.44
ROANOKE 482700003A01	77*	25	1.44	1.67	2.20	2.66	2.72	2.99	3.17	5.13
WASHINGTON										
SEATTLE 491840001A01	77	31	.72	1.08	1.65	2.31	2.48	2.51	2.84	3.14
SPOKANE 492040001A01	77*	26	.64	.74	.95	1.21	1.42	1.83	2.00	2.21
TACOMA 492140001A01	77	28	.62	.85	1.32	2.17	2.68	2.94	3.13	4.12
WEST VIRGINIA										
CHARLESTON 500280001A01	77*	26	.46	.93	1.39	1.71	1.92	1.94	2.37	2.51
SOUTH CHARLEST 501760001A01	77*	24	.14	.16	1.21	1.49	1.66	1.90	1.92	1.99
WISCONSIN										
EAU CLAIRE 510840002A01	77*	20	.57	.84	1.37	2.62	2.93	3.88	4.54	7.17
KENOSHA 511540001A01	77*	23	.25	.90	2.36	3.57	4.43	4.52	5.11	9.26
MADISON 511860001A01	77	28	.84	1.20	2.06	3.53	4.19	5.01	5.82	7.58

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
VIRGINIA									
DANVILLE									
480920001A01	77	29	4.61	4.61	4.65	2.854	.965	2.669	1.495
FAIRFAX CO									
481060001A01	77*	27	5.55	5.55	5.76	3.595	1.320	3.245	1.706
HAMPTON									
481440001A01	77	30	6.25	6.25	6.75	3.987	1.449	3.729	1.460
LYNCHBURG									
481840002A01	77	30	5.00	5.00	5.49	3.072	.866	2.964	1.307
NORFOLK									
482140001A01	77*	26	5.61	5.61	5.80	3.470	1.147	3.278	1.427
PORTSMOUTH									
482440001A01	77*	26	4.88	4.88	6.22	3.134	1.208	2.895	1.531
RICHMOND									
482660002A01	77*	26	5.18	5.18	5.59	3.100	1.298	2.756	1.752
ROANOKE									
482700003A01	77*	25	5.14	7.22	7.22	2.897	1.300	2.685	1.462
WASHINGTON									
SEATTLE									
491840001A01	77	31	3.65	3.89	4.93	2.260	.934	2.070	1.555
SPOKANE									
492040001A01	77*	26	3.44	3.44	3.46	1.509	.765	1.352	1.600
TACOMA									
492140001A01	77	28	4.83	4.83	5.21	2.384	1.271	2.041	1.815
WEST VIRGINIA									
CHARLESTON									
500280001A01	77*	26	4.04	4.04	4.48	1.848	.893	1.659	1.626
SOUTH CHARLEST									
501760001A01	77*	24	2.50	3.08	3.08	1.516	.664	1.280	2.092
WISCONSIN									
EAU CLAIRE									
510840002A01	77*	20	11.49	11.62	11.62	3.544	3.200	2.533	2.317
KENOSHA									
511540001A01	77*	23	11.41	13.01	13.01	4.231	3.253	3.090	2.465
MADISON									
511860001A01	77	28	8.47	8.47	8.56	4.005	2.320	3.325	1.925

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
WISCONSIN										
MILWAUKEE 512200099A01	77	26	.66	1.05	2.30	3.63	4.16	5.62	6.52	7.52
RACINE 512880002A01	77	28	.87	1.92	2.91	4.05	4.56	4.81	5.79	6.46
SUPERIOR 513480001A01	77	21	.32	.45	.62	1.37	1.90	2.24	2.70	4.38

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
WISCONSIN									
MILWAUKEE									
512200099A01	77	26	12.47	12.47	12.58	4.465	3.263	3.424	2.177
RACINE									
512880002A01	77	28	7.88	7.88	11.15	4.286	2.240	3.717	1.780
SUPERIOR									
513480001A01	77	21	14.19	24.37	24.37	3.199	5.675	1.528	2.982

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ARIZONA GRAND CANYON N 030370001A03	77	25	.15	.18	.43	.79	.85	.93	.98	1.33
DELAWARE KENT CO 080060001A03	77*	23	.48	1.75	2.59	3.08	3.11	3.33	3.52	5.14
FLORIDA HIGHLANDS CO 101780002A03	77*	21	.44	.54	.93	1.57	1.74	1.80	1.90	2.28
HAWAII MAUNA LOA 120080001A03	77*	23	LD	LD	LD	.07	.10	.12	.15	.26
IDAHO BUTTE CO 130340001A03	77*	22	.13	.17	.25	.34	.41	.50	.62	.81
INDIANA MONROE CO 152800001A03	77*	18	.09	.44	1.14	1.99	2.66	3.24	3.96	4.29
PARKE CO 153260001A03	77*	22	.67	1.38	2.09	2.42	2.88	3.95	4.26	5.41
MAINE ACADIA NAT PAR 200010001A03	77	24	.24	.25	.52	.63	.79	1.45	1.69	2.15
MARYLAND CALVERT CO 210280001A03	77*	25	.33	.69	1.98	2.13	2.58	3.11	3.78	4.34
MISSISSIPPI JACKSON CO 251280001A03	77*	22	.65	.65	1.20	1.64	1.89	1.99	2.48	3.10
MISSOURI SHANNON CO 264480002A03	77*	22	.05	.46	.74	.97	1.36	1.49	1.99	2.34
MONTANA GLACIER NAT PA 270570001A03	77*	17	.06	.07	.18	.37	.38	.49	.55	.57

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
ARIZONA									
GRAND CANYON N									
030370001A03	77	25	1.61	2.02	2.02	.763	.452	.625	2.006
DELAWARE									
KENT CO									
080060001A03	77*	23	5.53	5.71	5.71	3.115	1.238	2.829	1.655
FLORIDA									
HIGHLANDS CO									
101780002A03	77*	21	2.45	2.90	2.90	1.497	.647	1.344	1.661
HAWAII									
MAUNA LOA									
120080001A03	77*	23	.29	.32	.32				
IDAHO									
BUTTE CO									
130340001A03	77*	22	1.23	1.46	1.46	.469	.335	.386	1.850
INDIANA									
MONROE CO									
152800001A03	77*	18	4.34	5.91	5.91	2.494	1.590	1.820	2.743
PARKE CO									
153260001A03	77*	22	6.03	8.23	8.23	3.192	1.783	2.762	1.759
MAINE									
ACADIA NAT PAR									
200010001A03	77	24	2.39	2.64	2.64	1.056	.743	.824	2.083
MARYLAND									
CALVERT CO									
210280001A03	77*	25	4.80	5.15	5.15	2.542	1.302	2.114	2.047
MISSISSIPPI									
JACKSON CO									
251280001A03	77*	22	3.27	5.22	5.22	1.852	1.053	1.616	1.703
MISSOURI									
SHANNON CO									
264480002A03	77*	22	2.56	4.29	4.29	1.344	.936	1.023	2.438
MONTANA									
GLACIER NAT PA									
270570001A03	77*	17	.72	1.13	1.13	.390	.276	.292	2.354

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
MONTANA ROSEBUD CO 271360026A03	77*	24	.08	.11	.42	.59	.63	.85	.91	1.10
NEVADA WHITE PINE CO 290560001A03	77	29	LD	LD	.06	.26	.38	.75	.94	1.02
NEW HAMPSHIRE COOS CO 300140001A03	77*	25	LD	.38	.56	.82	1.05	1.40	1.55	2.03
OREGON CURRY CO 380440001A03	77	28	LD	.17	.41	.54	.64	.71	.91	1.05
PENNSYLVANIA CLARION CO 391760001A03	77*	21	.10	.18	.85	1.68	2.02	2.57	2.73	3.05
RHODE ISLAND WASHINGTON CO 410380002A03	77*	20	.42	.70	1.39	1.99	2.28	2.73	2.78	3.53
SOUTH CAROLINA RICHLAND CO 421900002A03	77*	19	.49	.52	1.21	1.51	1.65	1.85	1.98	2.13
SOUTH DAKOTA BLACK HILLS NA 430110001A03	77*	24	.15	.15	.23	.40	.54	.65	.69	.87
TENNESSEE CUMBERLAND CO 440680001A03	77	29	.33	.94	1.46	2.09	2.14	2.37	2.47	3.10
TEXAS TOM GREEN CO 455200001A03	77	26	.34	.71	1.02	1.15	1.20	1.23	1.37	1.75
VERMONT ORANGE CO 470360001A03	77*	20	.29	.42	.88	1.31	1.54	1.88	2.64	3.17
VIRGINIA SHENANDOAH NAT 482890001A03	77*	26	.10	.55	1.14	1.56	1.66	1.83	2.05	2.39

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+0.7	+-12.0
3-6	-5.6	+- 8.0
> 6	-2.8	+- 8.0

						ARITHMETIC		GEOMETRIC	
SITE:	YR	NO.	95	98	MAX	MEAN	STDEV	MEAN	STD
MONTANA									
ROSEBUD CO									
271360026A03	77*	24	1.19	2.78	2.78	.684	.557	.498	2.429
NEVADA									
WHITE PINE CO									
290560001A03	77	29	1.59	1.59	2.69				
NEW HAMPSHIRE									
COOS CO									
300140001A03	77*	25	3.07	3.57	3.57	1.113	.854	.798	2.705
OREGON									
CURRY CO									
380440001A03	77	28	1.68	1.68	1.71	.637	.407	.500	2.294
PENNSYLVANIA									
CLARION CO									
391760001A03	77*	21	3.68	3.70	3.70	1.743	1.119	1.230	2.823
RHODE ISLAND									
WASHINGTON CO									
410380002A03	77*	20	3.64	4.10	4.10	2.138	1.011	1.876	1.767
SOUTH CAROLINA									
RICHLAND CO									
421900002A03	77*	19	2.14	2.40	2.40	1.478	.578	1.345	1.618
SOUTH DAKOTA									
BLACK HILLS NA									
430110001A03	77*	24	1.19	1.50	1.50	.509	.341	.415	1.927
TENNESSEE									
CUMBERLAND CO									
440680001A03	77	29	3.56	3.56	4.53	2.032	.905	1.820	1.677
TEXAS									
TOM GREEN CO									
455200001A03	77	26	2.13	2.13	2.39	1.218	.448	1.137	1.481
VERMONT									
ORANGE CO									
470360001A03	77*	20	3.25	5.10	5.10	1.719	1.202	1.358	2.079
VIRGINIA									
SHENANDOAH NAT									
482890001A03	77*	26	2.45	2.45	2.56	1.501	.671	1.262	2.099

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

NONURBAN
NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
VIRGINIA WYTHE CO 483440001A03	77*	26	.13	.34	.78	1.28	1.48	1.65	2.00	2.33
WISCONSIN DOOR CO 510780001A03	77*	16	.23	.27	.41	.79	1.75	1.96	2.48	2.50
WYOMING YELLOWSTONE NA 520860001A03	77*	18	.06	.18	.22	.32	.36	.57	.64	.83

* INDICATES YEARLY CRITERIA NOT MET

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POLLUTANT - 12306 - NITRATE                        ANALYTICAL QUALITY   95% CONF.
METHOD - 92 - HI-VOL  REDUCTION-DIAZO CO            CONC. RANGE    BIAS PRECISION
UNITS - 01 - UG/CU METER (25 C)                        (UG/M3)      (%)       (%)
                                                          < 3      +0.7    +-12.0
                                                          3-6      -5.6    +- 8.0
                                                          > 6      -2.8    +- 8.0

                                                        ARITHMETIC        GEOMETRIC
SITE:             YR    NO.    95     98     MAX     MEAN     STDEV    MEAN      STD

VIRGINIA
 WYTHE CO
 483440001A03    77*    26   2.52    2.52    3.75   1.341      .859   1.032    2.305

WISCONSIN
 DOOR CO
 510780001A03    77*    16   3.65   11.57   11.57   1.961     2.767   1.065    3.030

WYOMING
 YELLOWSTONE NA
 520860001A03    77*    18    .84     .88     .88    .431      .258    .353    2.001
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POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ALABAMA										
BIRMINGHAM 010380003A01	78*	20	1.48	2.35	2.90	3.76	3.90	4.39	5.35	5.98
GADSDEN 011480001A01	78*	17	1.04	1.58	1.79	2.27	2.38	2.75	4.01	4.11
HUNTSVILLE 011860001A01	78*	15	2.21	2.24	2.80	3.33	3.38	4.67	4.69	5.42
ALASKA										
ANCHORAGE 020040003A01	78*	17	.27	.29	.58	.86	.88	1.23	1.27	1.30
FAIRBANKS 020160016A01	78*	24	.11	.18	.46	.63	.69	.80	.86	.95
ARIZONA										
DOUGLAS 030240004A01	78	24	LD	.21	.52	1.01	1.12	1.15	1.23	1.50
PHOENIX 030600002A01	78*	22	.68	1.07	3.35	4.45	4.73	4.94	6.50	11.40
TUCSON 030860001A01	78*	24	LD	.53	1.64	2.03	2.07	2.43	2.62	3.61
ARKANSAS										
LITTLE ROCK 041440001A01	78	20	1.33	1.74	2.25	3.21	3.50	3.79	4.41	4.58
TEXARKANA 042560001A01	78*	16	1.31	1.35	1.74	2.65	3.10	3.17	3.38	3.64
WEST MEMPHIS 042740004A01	78*	17	.96	1.10	1.66	2.81	3.51	3.60	4.40	4.46
CALIFORNIA										
ANAHEIM 050230001A01	78*	24	2.70	3.37	9.27	13.71	14.21	15.30	17.02	23.96
BERKELEY 050740001A01	78*	24	.93	.96	1.95	3.13	3.31	5.94	6.91	11.32
FRESNO 052800002A01	78*	24	2.76	3.91	9.70	11.38	13.46	15.04	17.60	22.85
LOS ANGELES 054180001A01	78*	20	2.57	4.46	10.56	14.17	18.22	20.48	21.61	22.96
ONTARIO 055380001A01	78*	24	2.94	3.83	10.08	20.39	21.37	23.72	25.06	30.33

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	STDEV	GEOMETRIC MEAN	STD
ALABAMA									
BIRMINGHAM 010380003A01	78*	20	6.25	6.63	6.63	3.988	1.430	3.732	1.471
GADSDEN 011480001A01	78*	17	5.29	5.88	5.88	2.755	1.372	2.480	1.592
HUNTSVILLE 011860001A01	78*	15	5.42	10.01	10.01	3.935	1.991	3.604	1.503
ALASKA									
ANCHORAGE 020040003A01	78*	17	1.38	1.50	1.50	.877	.398	.773	1.746
FAIRBANKS 020160016A01	78*	24	1.06	1.15	1.15	.622	.290	.535	1.864
ARIZONA									
DOUGLAS 030240004A01	78	24	1.58	1.62	1.62	.907	.465	.707	2.533
PHOENIX 030600002A01	78*	22	13.09	14.95	14.95	5.293	3.617	4.262	2.041
TUCSON 030860001A01	78*	24	4.23	5.49	5.49	2.195	1.182	1.697	2.801
ARKANSAS									
LITTLE ROCK 041440001A01	78	20	4.67	5.99	5.99	3.269	1.248	3.030	1.509
TEXARKANA 042560001A01	78*	16	4.27	5.16	5.16	2.687	1.123	2.472	1.532
WEST MEMPHIS 042740004A01	78*	17	4.72	4.94	4.94	2.916	1.370	2.567	1.734
CALIFORNIA									
ANAHEIM 050230001A01	78*	24	25.00	30.96	30.96	13.762	7.076	11.783	1.856
BERKELEY 050740001A01	78*	24	11.38	56.96	56.96	6.442	11.191	3.668	2.573
FRESNO 052800002A01	78*	24	23.84	28.18	28.18	12.946	6.598	11.123	1.834
LOS ANGELES 054180001A01	78*	20	23.70	25.93	25.93	15.058	7.136	12.879	1.902
ONTARIO 055380001A01	78*	24	31.15	50.11	50.11	18.750	11.216	14.874	2.168

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
CALIFORNIA										
SACRAMENTO 056580001A01	78*	24	.61	1.15	2.11	3.37	6.72	7.31	8.56	15.84
SAN BERNARDINO 056680001A01	78*	24	2.35	3.49	6.88	18.02	22.91	24.48	26.08	31.81
SAN DIEGO 056800004A01	78*	24	1.50	3.04	4.01	6.56	8.32	9.60	9.87	13.59
SAN JOSE 056980004A01	78*	24	1.29	1.32	4.24	8.23	10.86	11.35	13.98	15.79
SANTA ANA 057180001A01	78*	20	2.33	2.72	6.80	11.39	12.70	15.91	15.99	23.09
CONNECTICUT										
BRIDGEPORT 070060001A01	78	30	1.04	1.23	2.23	2.65	3.63	4.27	5.17	5.94
HARTFORD 070420002A01	78*	21	.96	1.09	2.47	3.87	4.21	4.50	6.77	7.06
WATERBURY 071240123A01	78	31	.57	1.04	2.10	3.31	3.63	4.35	4.65	5.89
FLORIDA										
JACKSONVILLE 101960049A01	78*	23	1.20	1.40	2.05	2.52	2.89	3.03	3.28	3.38
TAMPA 104360002A01	78*	23	1.89	1.96	2.46	3.26	3.43	3.74	3.98	4.80
GEORGIA										
ATLANTA 110200001A01	78*	24	1.17	1.45	2.51	3.98	4.29	4.60	4.68	5.72
IDAHO										
BOISE CITY 130220001A01	78	26	.19	.67	1.00	1.45	1.98	2.17	2.62	3.91
INDIANA										
EAST CHICAGO 151180001A01	78*	18	2.50	3.06	3.40	4.51	5.26	5.61	5.76	7.80
EVANSVILLE 151300006A01	78*	23	1.44	2.17	4.29	5.30	5.68	7.06	7.48	11.09
FORT WAYNE 151380003A01	78	25	.66	2.57	4.38	5.88	7.18	9.69	10.03	11.26

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
CALIFORNIA									
SACRAMENTO 056580001A01	78*	24	16.83	32.24	32.24	6.890	7.218	4.379	2.694
SAN BERNARDINO 056680001A01	78*	24	33.63	56.74	56.74	18.101	13.154	13.277	2.388
SAN DIEGO 056800004A01	78*	24	13.92	14.71	14.71	7.640	3.962	6.543	1.832
SAN JOSE 056980004A01	78*	24	16.69	23.08	23.08	8.737	5.949	6.414	2.448
SANTA ANA 057180001A01	78*	20	23.87	27.86	27.86	12.399	7.450	10.048	2.050
CONNECTICUT									
BRIDGEPORT 070060001A01	78	30	7.48	7.48	7.87	3.487	1.892	3.013	1.751
HARTFORD 070420002A01	78*	21	7.31	7.93	7.93	4.043	2.196	3.415	1.886
WATERBURY 071240123A01	78	31	6.38	7.42	7.78	3.364	1.908	2.809	1.917
FLORIDA									
JACKSONVILLE 101960049A01	78*	23	3.67	3.89	3.89	2.527	.789	2.399	1.403
TAMPA 104360002A01	78*	23	5.48	6.94	6.94	3.418	1.211	3.238	1.392
GEORGIA									
ATLANTA 110200001A01	78*	24	5.80	9.19	9.19	3.863	1.806	3.450	1.660
IDAHO									
BOISE CITY 130220001A01	78	26	4.92	4.92	5.01	1.977	1.368	1.527	2.233
INDIANA									
EAST CHICAGO 151180001A01	78*	18	9.94	12.91	12.91	5.248	2.669	4.761	1.543
EVANSVILLE 151300006A01	78*	23	11.96	14.62	14.62	6.086	3.286	5.274	1.761
FORT WAYNE 151380003A01	78	25	16.01	17.83	17.83	7.096	4.146	5.852	2.018

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
INDIANA										
GARY 151520001A01	78*	25	.85	1.11	2.92	5.21	5.30	6.27	7.93	10.92
HAMMOND 151780001A01	78*	24	1.08	2.31	3.68	5.86	6.59	7.26	9.34	10.93
INDIANAPOLIS 152040012A01	78*	19	.82	2.65	4.14	5.16	5.48	6.63	7.37	9.20
NEW ALBANY 152980002A01	78*	22	2.30	2.32	4.03	4.86	5.46	6.14	7.30	8.16
SOUTH BEND 153880002A01	78*	23	1.25	1.83	3.08	4.12	4.67	5.30	5.46	6.96
TERRE HAUTE 154080001A01	78	24	1.00	1.87	3.80	5.26	5.87	6.75	9.15	12.07
IOWA										
DAVENPORT 161060001A01	78	28	.11	1.18	2.57	4.37	4.82	5.56	7.34	7.71
DES MOINES 161180001A01	78*	23	.66	.69	3.15	3.52	3.83	4.05	4.67	7.16
DUBUQUE 161260008A01	78*	22	.65	1.26	2.54	3.76	3.96	5.12	7.23	7.84
KANSAS										
KANSAS CITY 171800011A01	78	27	1.39	2.18	2.81	3.27	3.39	4.25	6.91	9.22
KANSAS CITY 171800015A01	78	28	.83	1.50	2.41	4.32	4.88	5.40	5.65	6.72
TOPEKA 173560001A01	78*	25	.92	1.02	2.88	3.78	3.83	4.66	5.43	6.18
WICHITA 173740001A01	78*	25	.63	1.21	1.83	2.52	2.72	2.91	3.43	3.99
KENTUCKY										
ASHLAND 180080002A01	78*	19	.35	.38	2.46	2.89	2.93	3.61	4.37	5.02
COVINGTON 180800001A01	78*	18	1.83	2.10	3.17	4.10	4.39	4.52	5.30	6.31
LOUISIANA										
BATON ROUGE 190280002A01	78*	24	.42	1.23	1.99	2.65	2.76	3.49	3.94	4.44

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC		GEOMETRIC	
						MEAN	STDEV	MEAN	STD
INDIANA									
GARY 151520001A01	78*	25	16.71	35.49	35.49	6.560	7.037	4.573	2.353
HAMMOND 151780001A01	78*	24	12.56	20.95	20.95	6.626	4.320	5.461	1.928
INDIANAPOLIS 152040002A01	78*	19	10.26	14.05	14.05	5.845	3.096	5.006	1.874
NEW ALBANY 152980002A01	78*	22	9.05	16.46	16.46	5.670	3.077	5.068	1.602
SOUTH BEND 153880002A01	78*	23	7.60	10.25	10.25	4.323	2.141	3.823	1.688
TERRE HAUTE 154080001A01	78	24	14.71	19.20	19.20	6.563	4.250	5.414	1.928
IOWA									
DAVENPORT 161060001A01	78	28	9.23	9.23	10.31	4.560	2.723	3.449	2.584
DES MOINES 161180001A01	78*	23	7.51	10.94	10.94	4.073	2.226	3.474	1.887
DUBUQUE 161260008A01	78*	22	9.12	11.62	11.62	4.492	2.822	3.641	2.029
KANSAS									
KANSAS CITY 171800011A01	78	27	11.27	11.27	14.05	4.616	3.215	3.844	1.800
KANSAS CITY 171800015A01	78	28	9.96	9.96	15.43	4.538	3.064	3.673	1.994
TOPEKA 173560001A01	78*	25	8.38	11.89	11.89	4.052	2.421	3.396	1.900
WICHITA 173740001A01	78*	25	5.08	8.66	8.66	2.726	1.590	2.387	1.690
KENTUCKY									
ASHLAND 180080002A01	78*	19	6.71	6.73	6.73	3.241	1.732	2.634	2.198
COVINGTON 180800001A01	78*	18	6.68	6.95	6.95	4.293	1.511	4.026	1.463
LOUISIANA									
BATON ROUGE 190280002A01	78*	24	5.65	10.35	10.35	3.112	1.952	2.647	1.832

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
LOUISIANA										
IBERVILLE PAR 191280002A01	78	28	LD	1.34	2.28	3.18	3.80	4.42	5.35	8.07
NEW ORLEANS 192020002A01	78*	24	1.00	1.28	3.50	4.17	4.28	5.17	5.57	6.84
SHREVEPORT 192740001A01	78*	24	.91	1.35	1.91	2.21	2.50	3.07	3.39	3.62
MAINE										
PORTLAND 200960004A01	78	27	.37	.76	1.30	1.80	2.30	2.54	3.65	4.71
MASSACHUSETTS										
BOSTON 220240012A01	78*	26	.75	1.68	2.38	3.20	4.05	4.17	5.02	5.35
CAMBRIDGE 220360001A01	78	28	.76	1.19	2.00	2.67	3.93	4.14	4.54	5.44
FALL RIVER 220580001A01	78	29	1.20	1.60	2.22	2.93	3.30	3.96	5.34	6.02
NEW BEDFORD 221500002A01	78	26	.51	.92	1.63	1.93	2.30	2.69	3.65	4.81
SPRINGFIELD 222160002A01	78	29	.99	1.08	2.03	2.77	3.21	3.64	4.37	5.68
WORCHESTER 222640004A01	78	29	.52	.79	1.95	2.88	2.97	3.16	3.52	4.75
MICHIGAN										
FLINT 231580008A01	78*	22	.52	.82	2.22	3.52	4.23	4.37	5.35	5.85
LANSING 232840001A01	78*	23	1.20	1.59	2.65	3.53	4.16	5.69	5.81	7.99
SAGINAW 234760001A01	78*	22	.77	.96	2.82	4.26	4.40	4.78	5.88	7.74
MINNESOTA										
DULUTH 241040017A01	78*	24	.52	.55	.87	1.76	1.90	2.52	3.22	3.50
MINNEAPOLIS 242260027A01	78	28	.67	1.00	1.85	2.63	3.24	4.06	4.20	4.69
ST PAUL 243300031A01	78*	17	.62	.85	1.65	2.79	3.05	3.48	3.98	4.66

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC		GEOMETRIC	
						MEAN	STDEV	MEAN	STD
LOUISIANA									
IBERVILLE PAR									
191280002A01	78	28	8.92	8.92	9.03	3.973	2.545	2.893	3.040
NEW ORLEANS									
192020002A01	78*	24	6.98	10.20	10.20	4.312	2.073	3.794	1.739
SHREVEPORT									
192740001A01	78*	24	3.87	6.14	6.14	2.572	1.119	2.362	1.528
MAINE									
PORTLAND									
200960004A01	78	27	5.78	5.78	5.90	2.344	1.583	1.859	2.061
MASSACHUSETTS									
BOSTON									
220240012A01	78*	26	6.79	6.79	8.28	3.605	1.769	3.180	1.709
CAMBRIDGE									
220360001A01	78	28	6.09	6.09	9.47	3.297	1.960	2.773	1.854
FALL RIVER									
220580001A01	78	29	6.65	6.65	7.59	3.513	1.786	3.098	1.674
NEW BEDFORD									
221500002A01	78	26	5.41	5.41	6.22	2.554	1.539	2.141	1.865
SPRINGFIELD									
222160002A01	78	29	6.41	6.41	6.45	3.138	1.623	2.732	1.739
WORCHESTER									
222640004A01	78	29	6.82	6.82	7.83	2.972	1.846	2.426	1.991
MICHIGAN									
FLINT									
231580008A01	78*	22	7.39	11.66	11.66	3.839	2.532	3.037	2.142
LANSING									
232840001A01	78*	23	8.62	10.26	10.26	4.395	2.472	3.765	1.786
SAGINAW									
234760001A01	78*	22	8.29	14.71	14.71	4.436	3.065	3.555	2.046
MINNESOTA									
DULUTH									
241040017A01	78*	24	4.64	10.30	10.30	2.238	2.068	1.662	2.162
MINNEAPOLIS									
242260027A01	78	28	6.35	6.35	15.36	3.325	2.762	2.647	1.967
ST PAUL									
243300031A01	78*	17	8.81	9.17	9.17	3.242	2.458	2.520	2.114

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
MISSISSIPPI										
JACKSON 251260002A01	78	31	.51	1.31	2.30	2.71	3.03	3.49	3.90	4.69
MISSOURI										
KANSAS CITY 262380002A01	78	29	.92	2.13	3.21	4.10	4.21	5.02	6.18	6.32
NEBRASKA										
LINCOLN 281560002A01	78	25	.46	1.31	2.16	2.53	2.66	3.50	4.21	5.73
OMAHA 281880034A01	78*	15	1.02	1.64	3.01	3.23	3.92	4.34	5.44	15.63
NEVADA										
LAS VEGAS 290320001A01	78*	21	.86	1.22	1.73	2.07	2.21	2.37	3.17	3.58
RENO 290480001A01	78	26	.81	.92	1.70	2.59	2.87	3.10	3.51	4.06
NEW JERSEY										
BAYONNE 310180001A01	78	23	1.66	1.84	2.55	3.58	4.24	4.33	6.00	7.20
CAMDEN 310720001A01	78	28	2.20	2.43	2.95	4.31	5.27	6.13	7.24	7.83
CAMDEN CO 310740003A01	78*	23	1.57	1.76	2.52	3.42	3.83	4.01	4.51	5.53
ELIZABETH 311300002A01	78	29	1.33	1.72	2.64	4.39	4.80	5.34	5.96	7.76
GLASSBORO 311700001A01	78	27	1.29	2.28	3.39	4.46	4.68	5.51	6.38	7.98
JERSEY CITY 312320001A01	78*	23	1.66	1.79	3.36	4.92	5.28	7.03	8.37	11.69
NEWARK 313480001A01	78	26	1.93	2.16	3.26	4.20	4.75	5.17	6.43	7.24
PATERSON 314140001A01	78*	17	1.35	2.29	3.33	3.77	4.27	6.62	8.07	8.60
PERTH AMBOY 314220001A01	78	28	1.36	1.43	2.26	3.06	3.87	4.15	5.16	6.97
TRENTON 315400001A01	78	31	1.65	2.00	2.65	4.45	4.59	4.78	5.11	5.76

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
MISSISSIPPI									
JACKSON									
251260002A01	78	31	6.03	6.05	7.22	3.052	1.523	2.676	1.741
MISSOURI									
KANSAS CITY									
262380002A01	78	29	8.87	8.87	14.35	4.581	2.658	3.977	1.732
NEBRASKA									
LINCOLN									
281560002A01	78	25	6.69	7.35	7.35	3.073	1.729	2.612	1.856
OMAHA									
281880034A01	78*	15	15.63	20.15	20.15	5.529	5.412	4.020	2.181
NEVADA									
LAS VEGAS									
290320001A01	78*	21	4.22	4.31	4.31	2.316	.931	2.149	1.491
RENO									
290480001A01	78	26	7.78	7.78	22.37	3.358	4.151	2.439	2.051
NEW JERSEY									
BAYONNE									
310180001A01	78	23	8.27	12.60	12.60	4.428	2.570	3.872	1.674
CAMDEN									
310720001A01	78	28	9.10	9.10	13.73	5.158	2.679	4.581	1.634
CAMDEN CO									
310740003A01	78*	23	6.72	6.83	6.83	3.543	1.517	3.248	1.535
ELIZABETH									
311300002A01	78	29	11.56	11.56	13.86	4.746	3.119	3.945	1.848
GLASSBORO									
311700001A01	78	27	9.33	9.33	10.14	4.796	2.243	4.295	1.639
JERSEY CITY									
312320001A01	78*	23	12.31	12.95	12.95	5.710	3.445	4.760	1.882
NEWARK									
313480001A01	78	26	12.64	12.64	13.31	5.114	3.183	4.410	1.705
PATERSON									
314140001A01	78*	17	8.60	11.15	11.15	5.194	2.786	4.505	1.759
PERTH AMBOY									
314220001A01	78	28	7.35	7.35	12.80	3.871	2.530	3.262	1.794
TRENTON									
315400001A01	78	31	6.51	7.51	11.57	4.150	2.030	3.740	1.589

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
NEW MEXICO										
ALBUQUERQUE 320040001A01	78*	22	.93	1.10	1.20	2.32	2.53	2.69	2.99	3.39
NORTH CAROLINA										
CHARLOTTE 340700001A01	78	30	1.13	1.39	2.56	3.13	3.38	4.07	4.11	4.47
DURHAM 341160001A01	78*	23	1.38	1.44	2.40	2.85	3.34	3.51	3.64	4.97
GREENSBORO 341740009A01	78*	25	.61	1.35	2.07	2.82	2.90	3.00	3.86	4.19
MOREHEAD CITY 342720002A01	78	28	.63	1.04	1.25	1.79	2.12	2.54	2.91	3.05
WINSTON-SALEM 344460002A01	78	29	.95	1.23	2.40	3.09	3.26	3.96	4.46	4.74
OHIO										
AKRON 360060014A01	78	26	.36	1.72	3.47	4.62	4.79	5.31	6.20	6.42
CANTON 361000001A01	78*	25	.72	2.99	3.43	3.97	4.14	5.68	6.15	6.65
CINCINNATI 361220001A01	78	30	1.70	2.24	3.40	4.04	4.14	4.47	5.79	6.28
CINCINNATI 361220019A01	78*	18	1.70	1.95	3.18	3.74	3.89	4.52	4.53	5.10
CLEVELAND 361300001A01	78	26	1.20	1.53	2.64	3.35	4.20	4.63	5.79	6.70
COLUMBUS 361460001A01	78*	26	1.02	2.40	3.79	4.34	4.74	5.17	6.04	8.81
DAYTON 361660001A01	78	26	1.80	2.91	3.68	3.99	4.56	4.92	6.42	7.27
MANSFIELD 363840008A01	78	29	.73	1.82	2.72	4.63	5.18	5.39	5.54	6.03
PORTSMOUTH 365620002A01	78	27	1.61	1.73	2.70	3.06	3.14	3.56	4.14	5.29
STEUBENVILLE 366420012A01	78	24	1.58	2.38	2.89	3.91	4.22	4.44	5.02	6.74
TOLEDO 366600006A01	78*	20	.29	3.46	4.73	5.77	6.74	7.65	8.23	9.45

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
NEW MEXICO									
ALBUQUERQUE 320040001A01	78*	22	3.50	5.23	5.23	2.408	.954	2.236	1.494
NORTH CAROLINA									
CHARLOTTE 340700001A01	78	30	5.86	5.86	6.81	3.320	1.299	3.061	1.533
DURHAM 341160001A01	78*	23	5.87	6.56	6.56	3.152	1.295	2.923	1.486
GREENSBORO 341740009A01	78*	25	4.92	5.11	5.11	2.774	1.130	2.516	1.629
MOREHEAD CITY 342720002A01	78	28	3.10	3.10	3.31	1.992	.831	1.813	1.583
WINSTON-SALEM 344460002A01	78	29	5.51	5.51	7.67	3.296	1.483	2.963	1.636
OHIO									
AKRON 360060014A01	78	26	8.36	8.36	8.99	4.461	2.124	3.782	1.991
CANTON 361000001A01	78*	25	6.73	8.57	8.57	4.398	1.789	3.987	1.647
CINCINNATI 361220001A01	78	30	8.83	8.83	15.12	4.557	2.531	4.103	1.556
CINCINNATI 361220019A01	78*	18	5.68	6.14	6.14	3.816	1.176	3.628	1.404
CLEVELAND 361300001A01	78	26	8.52	8.52	15.13	4.318	3.003	3.557	1.881
COLUMBUS 361460001A01	78*	26	9.11	9.11	11.47	4.975	2.409	4.436	1.664
DAYTON 361660001A01	78	26	9.61	9.61	9.78	4.910	2.163	4.511	1.514
MANSFIELD 363840008A01	78	29	6.95	6.95	7.87	4.214	1.785	3.757	1.709
PORTSMOUTH 365620002A01	78	27	5.81	5.81	6.06	3.305	1.275	3.081	1.467
STEUBENVILLE 366420012A01	78	24	8.53	12.07	12.07	4.323	2.262	3.900	1.564
TOLEDO 366600006A01	78*	20	10.27	11.39	11.39	6.275	2.631	5.341	2.148

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
OHIO										
YOUNGSTOWN 367760001A01	78	27	1.15	1.55	3.37	4.41	4.72	5.20	5.44	6.17
OKLAHOMA										
TULSA 373000110A01	78*	21	.95	1.14	2.41	3.17	3.56	3.95	5.06	6.12
OREGON										
PORTLAND 381460001A01	78*	24	.39	.57	1.25	1.82	1.91	2.18	2.96	5.44
PENNSYLVANIA										
ALLENTOWN 390120001A01	78*	19	1.57	1.69	2.17	3.45	3.50	3.88	4.38	5.07
BETHLEHEM 390780002A01	78*	24	1.26	2.12	2.98	3.72	3.81	5.16	5.80	6.10
HARRISBURG 393880361A01	78	26	1.51	2.16	3.37	4.45	5.03	5.44	6.02	7.52
HAZLETON 393960001A01	78	28	1.21	1.44	2.23	2.93	3.56	4.03	4.24	4.64
READING 397620001A01	78	29	1.05	1.99	2.87	4.22	4.58	4.85	5.51	5.94
PUERTO RICO										
GUAYANILLA CO 401100003A01	78	28	.46	.47	.65	.81	.88	.97	1.09	1.27
GUAYNABO CO 401140001A01	78*	25	.07	.60	.87	1.08	1.18	1.28	1.41	1.68
PONCE 401920002A01	78	27	.35	.50	.66	.76	.81	.86	.95	.97
SABANA SECA 402065001A01	78*	25	.36	.49	.70	.89	1.00	1.09	1.13	1.27
SAN JUAN CO 402160001A01	78*	24	.37	.42	.63	.91	.95	1.09	1.09	1.18
RHODE ISLAND										
EAST PROVIDENC 410120001A01	78*	19	1.29	1.53	2.48	3.17	3.69	3.98	4.31	5.07
SOUTH DAKOTA										
SIOUX FALLS 431480001A01	78*	22	.61	1.24	2.17	2.65	2.69	3.65	5.23	6.56

* INDICATES YEARLY CRITERIA NOT MET

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POLLUTANT - 12306 - NITRATE                         ANALYTICAL QUALITY   95% CONF.
METHOD - 92 - HI-VOL  REDUCTION-DIAZO CO             CONC. RANGE    BIAS PRECISION
UNITS - 01 - UG/CU METER (25 C)                          (UG/M3)      (%)       (%)
                                                           < 3       +6.8    +-21.0
                                                           3-6       -4.5    +-11.0
                                                           > 6       -1.2    +-24.0

                                                            ARITHMETIC       GEOMETRIC
SITE:            YR     NO.     95      98     MAX     MEAN      STDEV    MEAN      STD

OHIO
 YOUNGSTOWN
 367760001A01   78      27    7.46    7.46    8.94    4.309     1.890    3.837    1.699

OKLAHOMA
 TULSA
 373000110A01   78*     21    7.59    9.66    9.66    3.633     2.154    3.088    1.820

OREGON
 PORTLAND
 381460001A01   78*     24    5.49    8.99    8.99    2.373     1.964    1.819    2.100

PENNSYLVANIA
 ALLENTOWN
 390120001A01   78*     19    5.55   16.80   16.80    3.958     3.328    3.304    1.738

 BETHLEHEM
 390780002A01   78*     24    6.92    8.22    8.22    4.096     1.751    3.737    1.567

 HARRISBURG
 393880361A01   78      26    8.15    8.15    9.37    4.675     2.120    4.201    1.628

 HAZLETON
 393960001A01   78      28    5.55    5.55    6.00    3.217     1.316    2.944    1.557

 READING
 397620001A01   78      29    6.29    6.29    6.43    4.054     1.570    3.701    1.592

PUERTO RICO
 GUAYANILLA CO
 401100003A01   78      28    1.40    1.40    1.69     .868      .324     .813    1.447

 GUAYNABO CO
 401140001A01   78*     25    1.72    1.87    1.87    1.076      .407     .953    1.885

 PONCE
 401920002A01   78      27    1.45    1.45    1.77     .813      .312     .764    1.422

 SABANA SECA
 402065001A01   78*     25    1.60    1.60    1.60     .924      .316     .869    1.445

 SAN JUAN CO
 402160001A01   78*     24    1.36    1.62    1.62     .902      .306     .848    1.451

RHODE ISLAND
 EAST PROVIDENC
 410120001A01   78*     19    5.22    6.68    6.68    3.418     1.417    3.128    1.563

SOUTH DAKOTA
 SIOUX FALLS
 431480001A01   78*     22    8.10   12.19   12.19    3.623     2.696    2.896    1.984
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POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
TENNESSEE										
CHATTANOOGA 440380020A01	78	29	.16	.39	1.02	2.26	2.50	3.21	3.56	4.22
KNOXVILLE 441740003A01	78	29	1.12	1.47	3.10	3.53	3.80	4.05	4.13	5.09
MEMPHIS 442340001A01	78*	19	1.61	1.75	2.79	4.33	4.81	5.01	5.55	5.74
TEXAS										
AMARILLO 450070002A01	78*	17	1.25	1.45	1.55	1.86	1.86	2.04	2.59	2.86
AUSTIN 450220010A01	78	22	.77	.82	1.83	2.21	2.25	2.80	3.40	3.93
BEAUMONT 450330001A01	78	24	.48	.49	1.32	1.93	2.48	2.86	3.27	4.79
CORPUS CHRISTI 451150001A01	78	26	.66	.89	1.53	3.26	3.61	4.28	5.89	6.09
EL PASO 451700002A01	78*	17	LD	.51	.89	1.22	1.62	1.75	2.37	2.49
FORT WORTH 451880001A01	78	23	1.48	2.13	3.36	4.51	5.08	5.18	5.67	6.26
HOUSTON 452560001A01	78	25	1.44	2.87	3.86	5.13	5.34	6.10	6.46	7.64
LUBBOCK 453340001A01	78	25	.80	1.25	1.47	1.80	1.82	2.13	2.33	3.05
PASADENA 454060002A01	78*	23	.78	1.75	2.76	3.47	4.03	4.52	5.01	6.32
SAN ANTONIO 454570034A01	78	25	.42	.82	1.48	2.22	2.59	3.33	3.80	4.74
WICHITA FALLS 455560002A01	78	26	.91	1.22	1.55	2.45	2.67	2.90	3.22	4.31
UTAH										
OGDEN 460680001A01	78	29	.80	.89	2.07	2.72	2.78	2.91	3.20	3.44
SALT LAKE CITY 460920001A01	78*	25	.35	1.01	2.45	3.09	3.29	3.68	4.34	6.23
VIRGINIA										
DANVILLE 480920001A01	78	27	.24	.95	2.01	2.59	2.65	3.07	3.34	4.02

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
TENNESSEE									
CHATTANOOGA 440380020A01	78	29	6.25	6.25	10.24	2.466	2.143	1.634	2.789
KNOXVILLE 441740003A01	78	29	5.47	5.47	6.56	3.510	1.289	3.237	1.552
MEMPHIS 442340001A01	78*	19	6.08	6.89	6.89	4.073	1.635	3.717	1.586
TEXAS									
AMARILLO 450070002A01	78*	17	5.11	5.41	5.41	2.266	1.203	2.063	1.510
AUSTIN 450220010A01	78	22	4.63	6.62	6.62	2.448	1.409	2.094	1.796
BEAUMONT 450330001A01	78	24	7.18	8.92	8.92	2.575	2.026	1.975	2.140
CORPUS CHRISTI 451150001A01	78	26	8.14	8.14	10.43	3.511	2.493	2.689	2.184
EL PASO 451700002A01	78*	17	2.98	3.44	3.44	1.516	.940	1.096	3.066
FORT WORTH 451880001A01	78	23	6.85	7.31	7.31	4.392	1.586	4.080	1.512
HOUSTON 452560001A01	78	25	8.27	8.58	8.58	5.068	1.938	4.646	1.580
LUBBOCK 453340001A01	78	25	3.39	4.80	4.80	1.954	.839	1.817	1.459
PASADENA 454060002A01	78*	23	6.67	6.94	6.94	3.893	1.683	3.502	1.659
SAN ANTONIO 454570034A01	78	25	4.74	7.38	7.38	2.571	1.641	2.069	2.043
WICHITA FALLS 455560002A01	78	26	5.84	5.84	6.69	2.607	1.454	2.274	1.698
UTAH									
OGDEN 460680001A01	78	29	3.84	3.84	4.63	2.506	.942	2.294	1.588
SALT LAKE CITY 460920001A01	78*	25	6.75	7.38	7.38	3.264	1.799	2.718	1.992
VIRGINIA									
DANVILLE 480920001A01	78	27	5.48	5.48	5.77	2.670	1.347	2.268	1.955

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

URBAN
NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
VIRGINIA										
LYNCHBURG 481840002A01	78	29	.77	1.25	2.18	2.53	2.59	2.81	3.11	4.03
NORFOLK 482140001A01	78	29	.96	1.68	2.38	3.17	3.41	3.84	4.35	5.39
PORTSMOUTH 482440001A01	78*	25	1.08	2.35	2.55	3.05	3.19	3.43	4.61	5.68
WASHINGTON										
SEATTLE 491840001A01	78	30	.81	.90	1.41	1.83	2.22	2.52	3.09	3.45
SPOKANE 492040001A01	78	27	.60	.85	1.20	1.43	1.50	1.77	2.96	3.63
TACOMA 492140001A01	78	30	.72	1.05	1.22	1.62	1.92	2.64	2.97	3.42
WEST VIRGINIA										
CHARLESTON 500280001A01	78*	23	.33	1.17	1.72	3.09	3.63	4.18	4.65	8.09
WISCONSIN										
EAU CLAIRE 510840002A01	78	25	.40	1.07	2.00	2.61	2.80	3.55	4.14	5.63
KENOSHA 511540003A01	78	30	.90	1.45	2.93	5.49	6.31	7.13	9.03	10.56
MADISON 511860001A01	78	29	.84	1.91	3.17	4.72	5.24	5.92	7.20	9.39
MILWAUKEE 512200099A01	78*	26	1.01	1.53	2.71	5.29	5.58	7.49	8.21	12.83
RACINE 512880002A01	78	29	.96	1.24	3.21	5.30	5.53	6.79	9.10	11.05
SUPERIOR 513480001A01	78	26	.16	.66	.76	1.04	1.76	2.09	3.25	3.90

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
VIRGINIA									
LYNCHBURG 481840002A01	78	29	5.01	5.01	9.32	2.784	1.561	2.487	1.607
NORFOLK 482140001A01	78	29	6.44	6.44	6.72	3.381	1.521	3.051	1.608
PORTSMOUTH 482440001A01	78*	25	5.76	7.33	7.33	3.432	1.459	3.161	1.517
WASHINGTON									
SEATTLE 491840001A01	78	30	4.05	4.05	4.13	2.148	.986	1.932	1.611
SPOKANE 492040001A01	78	27	4.65	4.65	5.47	1.927	1.271	1.614	1.803
TACOMA 492140001A01	78	30	5.54	5.54	5.83	2.129	1.288	1.833	1.718
WEST VIRGINIA									
CHARLESTON 500280001A01	78*	23	9.32	13.07	13.07	3.870	2.979	2.939	2.242
WISCONSIN									
EAU CLAIRE 510840002A01	78	25	6.60	11.34	11.34	3.097	2.268	2.477	2.027
KENOSHA 511540003A01	78	30	11.18	11.18	21.63	5.980	4.347	4.603	2.175
MADISON 511860001A01	78	29	13.19	13.19	15.02	5.362	3.350	4.454	1.901
MILWAUKEE 512200099A01	78*	24	14.46	14.74	14.74	5.997	4.072	4.693	2.123
RACINE 512880002A01	78	29	12.60	12.60	14.29	5.926	3.642	4.727	2.105
SUPERIOR 513480001A01	78	26	8.14	8.14	9.22	2.248	2.418	1.425	2.639

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ARKANSAS MONTGOMERY CO 041760001A03	78	24	.47	.56	.92	1.15	1.30	1.56	1.82	2.49
DELAWARE KENT CO 080060001A03	78	30	.64	1.81	2.47	2.95	3.27	3.52	3.77	4.70
IDAHO BUTTE CO 130340001A03	78	29	.22	.26	.40	.51	.55	.55	.71	1.14
INDIANA MONROE CO 152800001A03	78*	20	.24	1.33	2.42	3.84	4.26	4.46	4.95	6.18
MAINE ACADIA NAT PAR 200010001A03	78*	23	.17	.23	.62	.90	1.12	1.30	1.44	2.06
MARYLAND CALVERT CO 210280001A03	78*	23	.64	1.14	2.79	3.40	3.50	4.56	5.13	6.04
MONTANA ROSEBUD CO 271360026A03	78*	24	.22	.23	.42	.57	.61	.90	1.24	1.67
NEVADA WHITE PINE CO 290560001A03	78*	24	.06	.11	.28	.43	.48	.57	.92	.98
NEW HAMPSHIRE COOS CO 300140001A03	78*	19	.22	.27	.36	.52	.92	.99	1.26	1.43
OREGON CURRY CO 380440001A03	78*	24	.06	.06	.28	.49	.79	.99	1.20	1.71
PENNSYLVANIA CLARION CO 391760001A03	78	30	LD	.13	.44	.61	.95	1.15	1.77	3.15
RHODE ISLAND WASHINGTON CO 410380002A03	78*	17	.94	.99	1.27	1.53	1.69	2.09	2.50	2.57

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO CO
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
< 3	+6.8	+-21.0
3-6	-4.5	+-11.0
> 6	-1.2	+-24.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
ARKANSAS MONTGOMERY CO 041760001A03	78	24	3.23	3.89	3.89	1.441	.843	1.254	1.695
DELAWARE KENT CO 080060001A03	78	30	5.51	5.51	5.71	3.180	1.181	2.940	1.545
IDAHO BUTTE CO 130340001A03	78	29	1.55	1.55	1.56	.592	.346	.521	1.640
INDIANA MONROE CO 152800001A03	78*	20	6.81	9.10	9.10	3.851	2.055	3.166	2.163
MAINE ACADIA NAT PAR 200010001A03	78*	23	2.19	3.43	3.43	1.123	.776	.891	2.073
MARYLAND CALVERT CO 210280001A03	78*	23	7.09	8.09	8.09	3.675	1.926	3.125	1.883
MONTANA ROSEBUD CO 271360026A03	78*	24	1.86	2.59	2.59	.815	.585	.658	1.935
NEVADA WHITE PINE CO 290560001A03	78*	24	1.00	1.01	1.01	.509	.311	.405	2.132
NEW HAMPSHIRE COOS CO 300140001A03	78*	19	1.44	2.88	2.88	.844	.662	.650	2.096
OREGON CURRY CO 380440001A03	78*	24	2.20	2.45	2.45	.781	.679	.487	3.052
PENNSYLVANIA CLARION CO 391760001A03	78	30	3.50	3.50	3.64	1.133	1.079	.680	3.184
RHODE ISLAND WASHINGTON CO 410380002A03	78*	17	3.57	4.19	4.19	1.873	.921	1.700	1.553

POLLUTANT - 12306 - NITRATE
METHOD - 92 - HI-VOL REDUCTION-DIAZO COUPLING
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

NO3

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
SOUTH DAKOTA										
BLACK HILLS NA										
430110001A03	78	27	.10	.27	.40	.59	.67	.82	.88	1.85
TEXAS										
MATAGORDA CO										
453530001A03	78*	18	.23	.36	.60	1.23	2.53	3.20	3.36	3.70
TOM GREEN CO										
455200001A03	78*	17	.50	.78	1.02	1.31	1.64	1.78	2.13	2.17
VIRGINIA										
SHENANDOAH NAT										
482890001A03	78*	18	.31	.51	.94	1.37	1.56	2.25	2.39	2.62
WYTHE CO										
483440001A03	78*	17	.30	.34	.94	1.69	1.73	1.94	2.52	2.85
WISCONSIN										
DOOR CO										
510780001A03	78*	16	LD	.28	.65	1.11	1.52	1.82	2.23	2.60

* INDICATES YEARLY CRITERIA NOT MET

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POLLUTANT - 12306 - NITRATE                          ANALYTICAL QUALITY   95% CONF.
METHOD - 92 - HI-VOL  REDUCTION-DIAZO CO               CONC. RANGE    BIAS PRECISION
UNITS - 01 - UG/CU METER (25 C)                            (UG/M3)     (%)       (%)
                                                               < 3    +6.8    +-21.0
                                                               3-6    -4.5    +-11.0
                                                               > 6    -1.2    +-24.0

                                                          ARITHMETIC       GEOMETRIC
SITE:           YR     NO.     95      98     MAX     MEAN     STDEV   MEAN       STD

SOUTH DAKOTA
 BLACK HILLS NA
 430110001A03  78      27    2.43    2.43    2.75     .828      .708    .612    2.209

TEXAS
 MATAGORDA CO
 453530001A03  78*     18    3.82    4.07    4.07    1.964     1.447   1.359    2.632

 TOM GREEN CO
 455200001A03  78*     17    2.20    2.62    2.62    1.464      .612   1.335    1.582

VIRGINIA
 SHENANDOAH NAT
 482890001A03  78*     18    3.26   11.77   11.77    2.093     2.552   1.453    2.249

 WYTHE CO
 483440001A03  78*     17    3.09    4.56    4.56    1.712     1.124   1.324    2.253

WISCONSIN
 DOOR CO
 510780001A03  78*     16    2.99    3.12    3.12    1.373      .976    .907    3.363
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POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ALABAMA										
BIRMINGHAM 010380003A01	77	25	3.5	4.9	6.5	8.2	9.1	9.8	10.0	14.4
GADSDEN 011480001A01	77	25	3.4	5.0	5.8	6.8	7.4	8.0	9.0	10.4
HUNTSVILLE 011860001A01	77	27	3.2	3.6	4.7	6.0	6.2	6.7	8.3	10.4
MOBILE 012380001A01	77*	19	4.6	4.8	6.0	7.0	8.0	8.7	9.7	10.3
MONTGOMERY 012460001A01	77*	20	1.7	2.4	4.9	6.1	6.2	6.6	9.0	10.5
ALASKA										
ANCHORAGE 020040003A01	77*	18	.7	.8	.9	1.0	1.7	1.9	1.9	2.8
FAIRBANKS 020160001A01	77*	25	.9	1.1	1.3	1.6	1.6	1.8	1.9	2.9
ARIZONA										
DOUGLAS 030240004A01	77*	25	1.2	2.5	3.3	3.8	4.6	5.4	6.1	9.1
PHOENIX 030600002A01	77*	20	1.3	1.5	2.1	2.7	2.9	3.1	3.7	4.2
TUCSON 030860001A01	77	30	1.6	2.0	2.9	3.8	4.1	4.4	5.1	6.2
CALIFORNIA										
ANAHEIM 050230001A01	77	30	2.1	3.3	6.1	8.0	10.4	11.9	14.0	17.4
BERKELEY 050740001A01	77	30	2.2	2.4	3.9	4.8	5.3	5.6	6.6	9.1
BURBANK 050900002A01	77	30	2.9	3.6	6.2	7.6	9.9	11.6	17.3	22.0
FRESNO 052800002A01	77	30	1.5	2.0	3.3	4.1	4.6	4.8	5.6	8.1
LONG BEACH 054100001A01	77	27	3.7	5.3	8.0	10.6	12.2	13.7	17.1	26.3
LOS ANGELES 054180001A01	77	30	2.9	3.5	6.0	8.7	10.4	13.9	16.9	19.9

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
ALABAMA									
BIRMINGHAM 010380003A01	77	25	17.2	18.8	18.8	8.78	3.69	8.13	1.484
GADSDEN 011480001A01	77	25	11.2	22.0	22.0	7.60	3.59	7.05	1.451
HUNTSVILLE 011860001A01	77	27	13.5	13.5	17.3	6.70	3.36	6.08	1.534
MOBILE 012380001A01	77*	19	13.6	14.0	14.0	7.96	2.67	7.58	1.373
MONTGOMERY 012460001A01	77*	20	10.5	16.1	16.1	6.57	3.42	5.74	1.743
ALASKA									
ANCHORAGE 020040003A01	77*	18	2.9	3.0	3.0	1.51	.79	1.33	1.651
FAIRBANKS 020160001A01	77*	25	3.3	5.2	5.2	1.76	.93	1.61	1.501
ARIZONA									
DOUGLAS 030240004A01	77*	25	11.8	13.4	13.4	5.03	2.98	4.35	1.718
PHOENIX 030600002A01	77*	20	4.8	7.1	7.1	2.95	1.36	2.70	1.539
TUCSON 030860001A01	77	30	6.9	6.9	7.7	3.94	1.57	3.65	1.491
CALIFORNIA									
ANAHEIM 050230001A01	77	30	20.2	20.2	24.5	9.96	5.57	8.47	1.826
BERKELEY 050740001A01	77	30	10.3	10.3	16.0	5.47	2.85	4.92	1.576
BURBANK 050900002A01	77	30	24.7	24.7	29.2	10.96	7.17	8.98	1.906
FRESNO 052800002A01	77	30	10.0	10.0	21.9	4.97	3.34	4.15	1.770
LONG BEACH 054100001A01	77	27	32.5	32.5	36.3	13.38	8.67	11.21	1.815
LOS ANGELES 054180001A01	77	30	25.9	25.9	33.9	11.43	7.67	9.28	1.941

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
CALIFORNIA										
OAKLAND 055300001A01	77	29	2.3	2.6	3.6	4.4	4.5	5.1	5.2	7.8
ONTARIO 055380001A01	77	30	3.5	3.7	5.9	7.7	9.4	10.7	19.1	24.3
PASADENA 055760002A01	77	29	1.9	3.1	5.4	6.4	9.8	11.8	13.3	19.1
SACRAMENTO 056580001A01	77	30	.9	1.5	2.6	3.2	3.4	3.8	3.8	4.1
SAN BERNARDINO 056680001A01	77	29	1.1	2.2	3.3	7.4	8.0	13.4	15.5	21.5
SAN DIEGO 056800004A01	77	30	1.8	3.1	4.9	8.0	10.0	11.5	14.5	16.3
SAN FRANCISCO 056860001A01	77	30	1.9	2.5	3.1	3.6	3.7	4.4	5.2	7.0
SAN JOSE 056980004A01	77	30	1.6	1.8	2.4	3.0	3.1	3.7	4.1	6.3
SANTA ANA 057180001A01	77	29	1.7	2.9	6.1	7.9	9.2	10.6	12.5	17.7
TORRANCE 058260001A01	77	29	3.5	4.2	5.8	8.0	8.3	9.7	13.2	16.6
CONNECTICUT										
HARTFORD 070420002A01	77*	16	3.2	5.4	6.6	7.0	7.5	9.1	9.6	11.0
NEW HAVEN 070700001A01	77*	15	5.3	5.6	6.7	7.3	7.3	12.8	12.9	17.0
WATERBURY 071240123A01	77*	26	3.6	5.2	6.2	7.9	8.3	8.7	10.6	12.2
DELAWARE										
NEWARK 080140001A01	77*	25	6.9	8.0	9.2	10.8	10.8	12.9	13.7	19.3
WILMINGTON 080260002A01	77*	22	8.0	8.0	10.4	11.6	13.8	14.8	20.4	22.6
FLORIDA										
JACKSONVILLE 101960002A01	77	28	4.7	5.1	7.2	8.3	9.2	11.5	12.7	13.5

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC		GEOMETRIC	
						MEAN	STDEV	MEAN	STD
CALIFORNIA									
OAKLAND 055300001A01	77	29	9.7	9.7	13.5	4.98	2.47	4.54	1.523
ONTARIO 055380001A01	77	30	29.4	29.4	38.1	11.79	8.90	9.34	1.959
PASADENA 055760002A01	77	29	27.5	27.5	29.2	10.07	7.27	7.92	2.044
SACRAMENTO 056580001A01	77	30	6.7	6.7	8.1	3.28	1.47	2.97	1.599
SAN BERNARDINO 056680001A01	77	29	27.4	27.4	31.7	10.32	8.79	7.04	2.541
SAN DIEGO 056800004A01	77	30	18.9	18.9	20.3	9.07	5.33	7.51	1.920
SAN FRANCISCO 056860001A01	77	30	8.8	8.8	16.8	4.56	2.87	4.04	1.575
SAN JOSE 056980004A01	77	30	7.8	7.8	8.0	3.51	1.80	3.17	1.562
SANTA ANA 057180001A01	77	29	20.9	20.9	24.1	9.30	5.66	7.69	1.935
TORRANCE 058260001A01	77	29	19.4	19.4	24.6	9.47	5.20	8.33	1.659
CONNECTICUT									
HARTFORD 070420002A01	77*	16	12.3	15.7	15.7	8.09	3.02	7.59	1.449
NEW HAVEN 070700001A01	77*	15	17.0	19.0	19.0	9.63	4.45	8.79	1.542
WATERBURY 071240123A01	77*	26	15.1	15.1	18.3	8.40	3.34	7.86	1.445
DELAWARE									
NEWARK 080140001A01	77*	25	19.4	24.3	24.3	12.09	4.52	11.40	1.404
WILMINGTON 080260002A01	77*	22	23.5	23.5	23.5	14.20	5.35	13.31	1.438
FLORIDA									
JACKSONVILLE 101960002A01	77	28	16.9	16.9	17.6	9.56	3.49	8.98	1.436

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
FLORIDA										
MIAMI 102700002A01	77*	20	3.2	4.1	4.7	5.6	6.0	6.3	6.4	6.8
TAMPA 104360002A01	77*	26	5.1	6.1	7.1	8.1	8.7	9.4	10.3	11.2
GEORGIA										
ATLANTA 110200001A01	77	27	4.3	4.5	5.8	7.5	8.0	8.9	9.7	13.8
COLUMBUS 111280001A01	77	28	1.9	3.6	5.7	6.8	7.9	8.9	10.2	13.5
SAVANNAH 114500001A01	77*	18	3.6	5.4	7.2	8.0	11.4	12.5	13.6	16.8
HAWAII										
HONOLULU 120120001A01	77	29	4.5	4.7	5.9	6.7	7.1	7.4	7.8	8.0
IDAHO										
BOISE CITY 130220001A01	77	28	1.1	1.2	1.5	1.8	2.0	2.1	2.2	3.5
ILLINOIS										
BLUE ISLAND 140500001A01	77*	17	4.5	4.8	9.3	14.4	15.9	17.4	19.1	19.3
CHICAGO 141220001A01	77*	18	3.8	4.2	5.8	8.4	10.6	10.9	11.3	12.0
MOLINE 145120001A01	77*	23	2.9	3.8	5.6	8.4	9.3	9.8	10.1	10.8
NORTH CHICAGO 145620002A01	77*	23	3.9	4.1	6.7	8.8	9.5	9.9	11.4	15.9
PEORIA 146080001A01	77*	22	5.7	5.8	9.5	10.6	11.0	11.6	16.4	20.2
ROCK ISLAND 146700001A01	77*	21	3.5	3.9	8.3	9.6	10.4	10.7	11.3	15.9
INDIANA										
EAST CHICAGO 151180001A01	77*	24	5.8	8.8	11.9	13.4	15.1	17.0	17.6	19.2
EVANSVILLE 151300001A01	77*	18	5.2	7.3	9.6	10.4	11.6	18.4	20.0	31.4

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
FLORIDA									
MIAMI 102700002A01	77*	20	9.9	19.6	19.6	6.29	3.44	5.79	1.457
TAMPA 104360002A01	77*	26	18.5	18.5	20.4	9.15	3.56	8.65	1.383
GEORGIA									
ATLANTA 110200001A01	77	27	15.8	15.8	17.9	8.27	3.71	7.60	1.504
COLUMBUS 111280001A01	77	28	18.8	18.8	19.3	8.02	4.31	7.04	1.689
SAVANNAH 114500001A01	77*	18	30.3	37.0	37.0	11.98	8.69	9.99	1.800
HAWAII									
HONOLULU 120120001A01	77	29	8.2	8.2	8.4	6.61	1.21	6.50	1.212
IDAHO									
BOISE CITY 130220001A01	77	28	4.6	4.6	18.7	2.62	3.26	2.05	1.748
ILLINOIS									
BLUE ISLAND 140500001A01	77*	17	19.4	44.0	44.0	15.02	9.05	12.91	1.776
CHICAGO 141220001A01	77*	18	14.2	15.1	15.1	8.89	3.38	8.23	1.520
MOLINE 145120001A01	77*	23	10.9	16.7	16.7	8.08	3.08	7.51	1.500
NORTH CHICAGO 145620002A01	77*	23	16.3	19.1	19.1	9.30	4.04	8.51	1.543
PEORIA 146080001A01	77*	22	24.6	29.2	29.2	12.32	6.05	11.16	1.561
ROCK ISLAND 146700001A01	77*	21	18.5	21.3	21.3	10.14	4.24	9.33	1.540
INDIANA									
EAST CHICAGO 151180001A01	77*	24	19.5	43.3	43.3	15.18	6.95	14.13	1.449
EVANSVILLE 151300001A01	77*	18	48.9	56.2	56.2	17.54	14.62	13.76	1.954

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
INDIANA										
FORT WAYNE 151380003A01	77*	23	4.4	6.0	8.5	10.2	11.0	12.9	13.1	20.4
GARY 151520001A01	77*	26	5.7	6.9	9.3	10.0	11.0	12.6	13.1	14.1
HAMMOND 151780002A01	77*	20	7.1	8.1	8.6	11.1	12.6	13.3	15.1	16.6
INDIANAPOLIS 152040002A01	77	27	5.7	6.9	10.4	12.2	14.9	15.8	18.8	21.3
NEW ALBANY 152980002A01	77*	24	4.0	5.3	7.7	11.6	11.8	13.9	15.3	24.2
SOUTH BEND 153880002A01	77*	27	4.0	5.8	7.1	9.2	9.6	10.4	12.4	14.0
TERRE HAUTE 154080001A01	77*	26	4.8	7.6	9.3	10.2	13.8	15.9	17.8	23.2
IOWA										
CEDAR RAPIDS 160640018A01	77*	15	4.4	4.9	5.3	6.2	6.8	7.6	8.1	9.0
KANSAS										
KANSAS CITY 171800015A01	77	30	2.8	3.6	4.9	7.0	7.6	9.3	10.3	12.8
TOPEKA 173560001A01	77*	24	1.5	1.9	3.1	4.3	4.6	5.8	6.0	8.5
WICHITA 173740001A01	77*	15	1.6	1.9	3.3	3.9	4.3	4.3	4.4	7.2
KENTUCKY										
ASHLAND 180080002A01	77*	17	6.6	7.1	8.8	19.7	20.9	22.4	28.7	35.9
BOWLING GREEN 180320001A01	77*	22	5.4	5.4	7.2	7.9	8.7	9.1	11.1	16.3
COVINGTON 180800001A01	77	28	4.7	5.6	7.6	9.9	10.5	17.2	18.9	22.3
LEXINGTON 182300001A01	77*	23	4.0	4.7	8.6	11.6	13.4	14.2	20.5	27.2
LOUISVILLE 182380002A01	77	26	5.1	6.3	8.3	11.7	13.3	14.0	16.0	23.1

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
INDIANA									
FORT WAYNE 151380003A01	77*	23	21.1	23.2	23.2	11.48	4.92	10.58	1.510
GARY 151520001A01	77*	26	16.8	16.8	20.6	10.97	3.36	10.51	1.346
HAMMOND 151780002A01	77*	20	18.4	18.8	18.8	11.87	3.61	11.37	1.350
INDIANAPOLIS 152040002A01	77	27	26.3	26.3	46.4	14.69	8.21	13.08	1.608
NEW ALBANY 152980002A01	77*	24	24.4	31.4	31.4	12.99	7.22	11.29	1.717
SOUTH BEND 153880002A01	77*	27	16.7	16.7	17.5	9.70	3.39	9.14	1.422
TERRE HAUTE 154080001A01	77*	26	29.8	29.8	41.0	14.48	8.39	12.69	1.659
IOWA									
CEDAR RAPIDS 160640018A01	77*	15	9.0	10.5	10.5	6.67	1.81	6.45	1.299
KANSAS									
KANSAS CITY 171800015A01	77	30	22.7	22.7	26.5	8.34	5.29	7.17	1.712
TOPEKA 173560001A01	77*	24	9.2	9.8	9.8	4.83	2.34	4.29	1.670
WICHITA 173740001A01	77*	15	7.2	11.1	11.1	4.27	2.39	3.78	1.657
KENTUCKY									
ASHLAND 180080002A01	77*	17	43.2	76.4	76.4	22.11	17.44	17.45	2.010
BOWLING GREEN 180320001A01	77*	22	16.5	22.2	22.2	9.44	4.17	8.77	1.450
COVINGTON 180800001A01	77	28	27.8	27.8	45.5	13.25	8.94	11.18	1.766
LEXINGTON 182300001A01	77*	23	31.3	36.6	36.6	14.08	8.68	11.94	1.794
LOUISVILLE 182380002A01	77	26	29.9	29.9	56.4	14.70	10.70	12.40	1.748

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
LOUISIANA										
BATON ROUGE 190280002A01	77	26	3.8	4.3	5.3	6.2	6.9	7.3	8.0	8.7
IBERVILLE PAR 191280002A01	77	24	2.3	2.7	4.5	5.3	7.2	8.4	8.5	13.3
NEW ORLEANS 192020002A01	77	26	3.2	3.9	5.8	6.7	7.6	7.9	9.0	9.2
MAINE										
PORTLAND 200960004A01	77	25	2.8	5.0	6.3	7.6	8.0	9.2	9.8	11.2
MARYLAND										
BALTIMORE 210120001A01	77*	26	4.6	7.5	8.9	10.2	11.8	12.7	15.5	18.4
MASSACHUSETTS										
WORCHESTER 222640004A01	77	23	3.2	4.0	5.6	6.8	7.4	8.1	8.5	11.7
MICHIGAN										
DETROIT 231180001A01	77*	23	4.2	6.9	8.9	11.3	14.4	17.2	17.5	20.9
FLINT 231580008A01	77*	16	4.6	5.3	7.2	8.0	8.6	8.7	9.3	9.4
GRAND RAPIDS 231820001A01	77*	22	2.0	2.7	6.9	7.7	8.8	9.2	13.5	18.2
LANSING 232840001A01	77*	22	4.0	4.5	6.8	8.1	8.6	9.4	12.6	15.0
SAGINAW 234760001A01	77	25	3.7	4.3	5.7	7.1	7.5	8.0	9.2	12.8
TRENTON 235120004A01	77*	21	5.3	6.2	7.3	9.9	10.2	11.6	15.6	19.3
MINNESOTA										
DULUTH 241040001A01	77*	25	2.3	3.5	4.3	6.2	6.3	7.2	7.9	11.0
MINNEAPOLIS 242260027A01	77	24	3.1	3.5	5.0	6.7	6.8	7.6	9.0	10.4
ST PAUL 243300031A01	77*	24	2.0	3.1	3.5	6.2	7.5	8.5	9.1	12.5

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
LOUISIANA									
BATON ROUGE 190280002A01	77	26	9.3	9.3	14.0	6.67	2.16	6.38	1.343
IBERVILLE PAR 191280002A01	77	24	14.2	27.5	27.5	7.53	5.38	6.28	1.812
NEW ORLEANS 192020002A01	77	26	11.8	11.8	16.7	7.16	2.84	6.69	1.448
MAINE									
PORTLAND 200960004A01	77	25	14.0	17.1	17.1	8.02	3.06	7.51	1.457
MARYLAND									
BALTIMORE 210120001A01	77*	26	20.4	20.4	25.9	12.05	4.90	11.21	1.468
MASSACHUSETTS									
WORCHESTER 222640004A01	77	23	12.0	13.2	13.2	7.29	2.52	6.89	1.412
MICHIGAN									
DETROIT 231180001A01	77*	23	30.1	32.2	32.2	13.83	7.13	12.29	1.643
FLINT 231580008A01	77*	16	10.4	11.0	11.0	8.05	1.71	7.86	1.260
GRAND RAPIDS 231820001A01	77*	22	18.6	25.9	25.9	9.47	5.70	8.03	1.830
LANSING 232840001A01	77*	22	16.5	18.7	18.7	9.08	4.04	8.30	1.541
SAGINAW 234760001A01	77	25	14.3	18.4	18.4	7.70	3.42	7.11	1.487
TRENTON 235120004A01	77*	21	20.5	21.4	21.4	10.96	4.87	10.08	1.506
MINNESOTA									
DULUTH 241040001A01	77*	25	11.6	14.5	14.5	6.30	2.94	5.71	1.571
MINNEAPOLIS 242260027A01	77	24	14.9	15.2	15.2	7.17	3.14	6.61	1.506
ST PAUL 243300031A01	77*	24	12.7	12.9	12.9	6.72	3.43	5.86	1.730

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
MISSISSIPPI										
JACKSON 251260002A01	77	26	3.7	4.3	5.0	5.5	6.6	7.6	8.5	9.1
MISSOURI										
ST LOUIS 264280001A01	77	27	5.0	5.5	7.4	10.0	10.1	11.0	14.9	16.5
ST LOUIS 264280072A01	77*	20	4.8	5.4	6.8	8.8	9.4	10.3	11.1	13.4
MONTANA										
HELENA 270720001A01	77*	20	.9	.9	2.6	3.1	3.8	4.6	5.0	5.9
NEBRASKA										
LINCOLN 281560002A01	77	28	1.6	2.0	2.7	3.5	4.2	4.8	5.1	6.3
OMAHA 281880034A01	77*	17	2.5	2.9	4.3	6.2	6.8	8.1	8.3	8.8
NEVADA										
LAS VEGAS 290320001A01	77	27	1.7	1.8	2.1	3.0	3.2	3.5	3.6	3.9
RENO 290480001A01	77*	23	1.2	1.3	2.0	2.6	2.8	3.0	3.2	4.1
NEW HAMPSHIRE										
CONCORD 300120002A01	77*	18	4.2	5.7	6.4	7.6	8.5	9.7	10.8	12.6
NEW JERSEY										
BAYONNE 310180001A01	77	29	4.5	6.0	7.5	8.7	9.3	10.9	13.3	16.7
CAMDEN 310720001A01	77*	21	6.1	7.7	9.0	13.4	15.0	17.9	21.4	24.6
CAMDEN CO 310740003A01	77*	24	3.9	4.0	7.1	8.4	9.4	15.1	16.2	18.5
GLASSBORO 311700001A01	77*	21	4.2	4.9	7.6	8.9	11.4	11.5	12.7	17.8
JERSEY CITY 312320001A01	77*	23	2.0	5.1	6.9	8.8	9.8	13.1	14.1	18.8

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
MISSISSIPPI									
JACKSON									
251260002A01	77	26	9.3	9.3	17.0	6.64	2.77	6.22	1.422
MISSOURI									
ST LOUIS									
264280001A01	77	27	25.8	25.8	27.5	11.05	5.58	10.01	1.546
ST LOUIS									
264280072A01	77*	20	15.5	23.6	23.6	9.73	4.28	9.02	1.470
MONTANA									
HELENA									
270720001A01	77*	20	6.5	7.4	7.4	3.60	1.88	3.07	1.862
NEBRASKA									
LINCOLN									
281560002A01	77	28	7.3	7.3	14.5	4.23	2.53	3.74	1.627
OMAHA									
281880034A01	77*	17	9.3	21.8	21.8	6.91	4.38	6.03	1.670
NEVADA									
LAS VEGAS									
290320001A01	77	27	4.0	4.0	4.6	2.90	.84	2.78	1.350
RENO									
290480001A01	77*	23	4.9	18.6	18.6	3.24	3.46	2.61	1.749
NEW HAMPSHIRE									
CONCORD									
300120002A01	77*	18	13.7	15.6	15.6	8.66	3.05	8.19	1.409
NEW JERSEY									
BAYONNE									
310180001A01	77	29	17.6	17.6	21.0	10.13	4.09	9.43	1.463
CAMDEN									
310720001A01	77*	21	24.8	27.0	27.0	14.74	6.43	13.44	1.559
CAMDEN CO									
310740003A01	77*	24	18.6	19.4	19.4	10.50	5.17	9.31	1.663
GLASSBORO									
311700001A01	77*	21	19.9	21.3	21.3	10.51	4.62	9.63	1.535
JERSEY CITY									
312320001A01	77*	23	20.5	21.0	21.0	10.44	5.16	9.20	1.716

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
NEW JERSEY										
NEWARK 313480001A01	77*	21	4.3	5.5	7.0	7.8	9.0	10.0	11.9	13.3
PATERSON 314140001A01	77*	16	6.9	8.6	10.4	13.1	14.7	14.8	17.4	22.2
PERTH AMBOY 314220001A01	77	27	5.2	5.7	6.7	9.0	10.1	11.2	15.1	17.7
TRENTON 315400001A01	77*	19	5.0	5.2	8.2	10.3	10.7	11.9	13.0	16.3
NEW MEXICO										
ALBUQUERQUE 320040001A01	77	25	1.4	1.9	2.3	2.6	3.0	3.0	3.6	4.1
NORTH CAROLINA										
CHARLOTTE 340700001A01	77	27	3.3	4.8	6.7	9.3	9.5	10.6	13.5	23.8
DURHAM 341160006A01	77	27	3.7	4.5	6.5	9.4	10.3	12.7	15.4	20.1
GREENSBORO 341740009A01	77*	22	3.9	4.3	6.2	8.7	10.1	12.2	14.8	18.5
WINSTON-SALEM 344460002A01	77	29	3.8	5.8	7.1	8.9	9.7	11.8	18.3	20.9
OHIO										
AKRON 360060014A01	77	26	6.8	9.4	11.8	12.7	16.7	17.8	21.0	26.9
CANTON 361000001A01	77*	27	6.5	8.2	10.5	13.1	14.0	15.5	17.5	19.8
CINCINNATI 361220001A01	77	29	6.7	7.4	9.2	12.0	12.7	14.9	18.9	20.8
CLEVELAND 361300001A01	77*	19	6.0	8.5	11.4	14.6	15.3	15.9	16.6	22.6
COLUMBUS 361460001A01	77	25	5.8	6.9	8.4	10.2	12.5	12.6	14.9	17.7
DAYTON 361660001A01	77	26	5.7	6.1	9.1	11.7	15.0	16.3	18.6	21.5
MANSFIELD 363840008A01	77*	25	6.7	7.1	8.6	10.3	11.3	13.6	14.8	18.3

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
NEW JERSEY									
NEWARK 313480001A01	77*	21	16.1	20.0	20.0	9.27	3.77	8.66	1.445
PATERSON 314140001A01	77*	16	25.6	27.1	27.1	14.55	6.00	13.51	1.483
PERTH AMBOY 314220001A01	77	27	20.7	20.7	22.6	10.58	4.94	9.65	1.532
TRENTON 315400001A01	77*	19	18.2	18.4	18.4	10.63	3.99	9.93	1.468
NEW MEXICO									
ALBUQUERQUE 320040001A01	77	25	4.5	5.1	5.1	2.86	.92	2.72	1.375
NORTH CAROLINA									
CHARLOTTE 340700001A01	77	27	24.5	24.5	36.3	11.34	7.70	9.54	1.777
DURHAM 341160006A01	77	27	26.1	26.1	30.2	11.24	6.67	9.69	1.731
GREENSBORO 341740009A01	77*	22	21.5	26.2	26.2	10.70	5.86	9.37	1.688
WINSTON-SALEM 344460002A01	77	29	25.0	25.0	32.2	11.93	7.07	10.31	1.708
OHIO									
AKRON 360060014A01	77	26	28.9	28.9	33.1	16.00	6.98	14.72	1.505
CANTON 361000001A01	77*	27	26.5	26.5	32.4	14.18	6.22	13.08	1.493
CINCINNATI 361220001A01	77	29	25.9	25.9	37.2	14.02	7.00	12.67	1.563
CLEVELAND 361300001A01	77*	19	24.7	24.9	24.9	14.53	5.26	13.64	1.448
COLUMBUS 361460001A01	77	25	22.9	23.3	23.3	11.69	4.90	10.82	1.488
DAYTON 361660001A01	77	26	25.5	25.5	50.5	14.67	9.21	12.77	1.672
MANSFIELD 363840008A01	77*	25	19.2	26.9	26.9	11.68	4.75	10.92	1.436

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
OHIO										
PORTSMOUTH 365620002A01	77	27	5.1	6.0	7.5	9.5	11.9	14.9	18.5	20.5
STEUBENVILLE 366420012A01	77*	21	7.5	9.1	13.9	17.8	23.0	24.6	27.5	36.6
TOLEDO 366600001A01	77*	24	5.8	6.0	8.5	9.9	10.6	11.0	14.5	19.9
YOUNGSTOWN 367760001A01	77	26	7.7	8.2	9.7	11.9	14.0	14.6	18.2	26.0
OKLAHOMA										
TAHLEQUAH 372880480A01	77*	19	1.8	2.0	3.0	4.5	4.8	5.2	5.8	7.1
TULSA 373000110A01	77	24	1.4	2.1	2.9	4.5	4.9	5.5	5.9	6.9
OREGON										
PORTLAND 381460001A01	77	28	2.3	2.7	3.3	4.7	5.5	6.0	6.3	10.3
PENNSYLVANIA										
ALLENTOWN 390120001A01	77*	25	4.6	6.4	7.6	9.1	10.1	11.8	12.8	16.3
ALTOONA 390140001A01	77*	18	6.2	7.1	7.7	9.7	10.2	13.7	15.4	16.4
BETHLEHEM 390780002A01	77*	22	6.2	6.7	8.8	9.8	10.4	11.9	13.8	16.3
ERIE 393060002A01	77*	21	4.2	5.3	7.5	9.2	9.5	10.3	15.3	22.6
HARRISBURG 393880361A01	77	30	5.0	6.2	7.8	10.0	11.3	13.9	14.8	16.7
HAZLETON 393960001A01	77	25	2.9	6.3	8.7	11.0	11.2	13.1	14.0	15.4
JOHNSTOWN 394460803A01	77*	22	7.0	7.3	11.6	15.2	17.5	18.5	18.7	20.3
LANCASTER CITY 394660002A01	77*	19	6.0	6.1	7.3	11.7	11.9	13.3	[illegible]	17.0
PHILADELPHIA 397140004A01	77	28	6.1	7.2	8.5	11.9	12.9	14.8	16.9	20.4

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
OHIO									
PORTSMOUTH									
365620002A01	77	27	24.4	24.4	29.8	12.34	6.39	10.98	1.626
STEUBENVILLE									
366420012A01	77*	21	37.4	41.9	41.9	20.88	9.71	18.81	1.608
TOLEDO									
366600001A01	77*	24	24.4	25.7	25.7	11.48	5.39	10.51	1.514
YOUNGSTOWN									
367760001A01	77	26	30.0	30.0	30.8	14.53	6.97	13.22	1.535
OKLAHOMA									
TAHLEQUAH									
372880480A01	77*	19	7.2	22.2	22.2	5.24	4.46	4.30	1.812
TULSA									
373000110A01	77	24	9.4	13.4	13.4	4.78	2.60	4.22	1.669
OREGON									
PORTLAND									
381460001A01	77	28	11.2	11.2	37.3	6.25	6.55	4.97	1.805
PENNSYLVANIA									
ALLENTOWN									
390120001A01	77*	25	16.5	16.6	16.6	10.13	3.53	9.56	1.417
ALTOONA									
390140001A01	77*	18	20.9	22.3	22.3	11.41	4.89	10.56	1.480
BETHLEHEM									
390780002A01	77*	22	16.3	18.3	18.3	10.90	3.42	10.41	1.363
ERIE									
393060002A01	77*	21	25.5	28.0	28.0	11.80	6.91	10.29	1.680
HARRISBURG									
393880361A01	77	30	18.3	18.3	19.7	11.22	4.06	10.51	1.454
HAZLETON									
393960001A01	77	25	16.2	16.9	16.9	10.74	3.48	10.09	1.475
JOHNSTOWN									
394460803A01	77*	22	22.0	29.1	29.1	15.48	5.28	14.60	1.431
LANCASTER CITY									
394660002A01	77*	19	18.5	22.5	22.5	11.29	4.76	10.42	1.505
PHILADELPHIA									
397140004A01	77	28	21.0	21.0	21.8	12.52	4.89	11.64	1.476

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
PENNSYLVANIA										
PITTSBURGH 397260001A01	77*	20	9.0	10.0	13.8	17.6	19.3	23.9	25.6	30.3
READING 397620001A01	77	29	7.1	7.6	9.0	10.1	10.5	14.5	15.6	19.6
SCRANTON 398040001A01	77	28	4.5	5.8	7.9	10.2	12.2	12.9	13.3	14.3
WARMINSTER 399160002A01	77*	23	5.8	6.1	8.7	11.5	12.4	14.1	14.5	17.7
WEST CHESTER 399280110A01	77	30	7.0	7.3	8.7	10.7	12.4	14.6	16.0	18.0
WILKES-BARRE 399430001A01	77	30	5.0	6.4	7.2	9.3	9.9	10.7	13.3	15.3
YORK 399560322A01	77	30	5.5	8.1	8.8	9.9	11.2	13.3	15.4	18.7
PUERTO RICO										
GUAYANILLA CO 401100003A01	77*	23	3.5	3.8	4.6	4.8	5.4	5.8	6.2	6.7
GUAYNABO CO 401140001A01	77	28	3.3	4.7	5.9	6.8	7.6	8.5	8.8	9.6
PONCE 401920002A01	77*	24	2.6	2.7	3.1	3.5	3.7	4.2	4.5	4.9
SABANA SECA 402065001A01	77*	26	3.1	3.4	4.1	5.5	5.7	5.9	6.9	7.2
SAN JUAN CO 402160001A01	77*	24	2.3	2.3	3.3	3.7	3.9	4.0	4.1	6.1
RHODE ISLAND										
EAST PROVIDENC 410120001A01	77*	21	4.1	5.4	6.8	8.3	8.8	9.8	10.7	14.6
SOUTH CAROLINA										
GREENVILLE 421180001A01	77	27	3.3	4.8	6.5	7.5	8.0	8.9	11.9	15.1
SOUTH DAKOTA										
SIOUX FALLS 431480001A01	77*	20	2.2	2.3	2.5	4.7	5.5	5.8	6.1	7.1
TENNESSEE										
CHATTANOOGA 440380001A01	77	24	4.9	5.6	6.9	7.7	8.8	12.1	13.2	16.0

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
PENNSYLVANIA									
PITTSBURGH									
397260001A01	77*	20	31.5	33.0	33.0	19.48	7.41	18.13	1.486
READING									
397620001A01	77	29	21.2	21.2	21.3	12.12	4.56	11.39	1.420
SCRANTON									
398040001A01	77	28	17.7	17.7	25.8	10.96	4.30	10.24	1.454
WARMINSTER									
399160002A01	77*	23	21.2	21.3	21.3	12.05	4.39	11.29	1.454
WEST CHESTER									
399280110A01	77	30	19.2	19.2	20.3	12.11	4.22	11.42	1.415
WILKES-BARRE									
399430001A01	77	30	17.5	17.5	17.9	10.01	3.60	9.43	1.415
YORK									
399560322A01	77	30	20.3	20.3	20.9	12.01	4.35	11.31	1.414
PUERTO RICO									
GUAYANILLA CO									
401100003A01	77*	23	6.8	7.0	7.0	5.19	1.02	5.10	1.218
GUAYNABO CO									
401140001A01	77	28	12.5	12.5	14.5	7.35	2.50	6.96	1.405
PONCE									
401920002A01	77*	24	5.5	6.7	6.7	3.83	.98	3.73	1.271
SABANA SECA									
402065001A01	77*	26	8.2	8.2	9.2	5.48	1.65	5.25	1.358
SAN JUAN CO									
402160001A01	77*	24	7.3	7.5	7.5	3.94	1.32	3.77	1.347
RHODE ISLAND									
EAST PROVIDENC									
410120001A01	77*	21	16.3	22.0	22.0	9.33	4.14	8.64	1.477
SOUTH CAROLINA									
GREENVILLE									
421180001A01	77	27	21.9	21.9	30.6	9.57	6.07	8.31	1.670
SOUTH DAKOTA									
SIOUX FALLS									
431480001A01	77*	20	7.2	10.6	10.6	4.70	2.22	4.24	1.604
TENNESSEE									
CHATTANOOGA									
440380001A01	77	24	17.5	22.7	22.7	10.02	4.51	9.21	1.506

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
TENNESSEE										
KNOXVILLE 441740002A01	77*	22	6.0	6.1	7.3	8.2	9.2	12.0	14.4	21.3
MEMPHIS 442340001A01	77*	15	5.5	6.0	6.6	6.8	7.1	7.8	9.7	12.6
NASHVILLE 442540001A01	77*	21	2.9	4.9	5.6	7.5	8.0	9.8	11.6	15.9
TEXAS										
AMARILLO 450070002A01	77*	21	1.2	1.6	2.2	2.5	2.6	3.5	3.5	3.8
AUSTIN 450220010A01	77*	17	1.1	1.7	2.3	2.9	3.2	4.1	5.3	5.8
BEAUMONT 450330001A01	77*	17	2.1	2.2	6.2	7.0	8.5	9.9	10.9	11.9
CORPUS CHRISTI 451150001A01	77	26	1.5	1.6	2.3	4.3	4.8	5.5	6.6	7.7
DALLAS 451310002A01	77*	21	2.1	2.8	4.4	5.2	6.4	7.2	8.1	9.8
FORT WORTH 451880001A01	77	26	2.5	3.3	3.9	4.7	6.3	6.8	7.9	8.4
HOUSTON 452560001A01	77*	15	2.9	4.9	5.8	6.0	7.0	7.6	9.2	10.5
LUBBOCK 453340001A01	77*	20	1.2	1.3	2.2	3.3	3.7	4.2	4.2	4.5
PASADENA 454060002A01	77*	27	3.1	3.6	6.5	7.6	8.2	9.4	11.4	12.1
SAN ANTONIO 454570034A01	77*	23	1.5	2.0	3.0	4.1	4.5	4.6	5.5	6.7
WICHITA FALLS 455560002A01	77	29	1.1	1.7	2.3	3.0	3.2	3.9	4.2	6.0
UTAH										
OGDEN 460680001A01	77*	22	1.3	1.6	2.6	3.4	3.6	3.8	4.5	10.6
SALT LAKE CITY 460920001A01	77*	24	2.3	2.9	3.1	4.1	4.5	6.6	8.6	14.9
VERMONT										
BURLINGTON 470140003A01	77	26	3.2	3.3	5.6	6.5	7.2	7.5	8.3	9.2

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
TENNESSEE									
KNOXVILLE 441740002A01	77*	22	21.9	23.3	23.3	10.97	5.42	9.95	1.545
MEMPHIS 442340001A01	77*	15	12.6	26.4	26.4	8.81	5.21	8.02	1.484
NASHVILLE 442540001A01	77*	21	18.8	20.3	20.3	8.88	4.59	7.95	1.609
TEXAS									
AMARILLO 450070002A01	77*	21	3.9	4.7	4.7	2.72	.90	2.58	1.407
AUSTIN 450220010A01	77*	17	5.9	8.8	8.8	3.60	1.96	3.16	1.696
BEAUMONT 450330001A01	77*	17	13.5	14.4	14.4	7.99	3.56	7.08	1.739
CORPUS CHRISTI 451150001A01	77	26	9.0	9.0	9.7	4.52	2.47	3.85	1.812
DALLAS 451310002A01	77*	21	10.7	14.0	14.0	6.21	2.92	5.60	1.603
FORT WORTH 451880001A01	77	26	10.6	10.6	13.5	5.84	2.75	5.29	1.567
HOUSTON 452560001A01	77*	15	10.5	12.4	12.4	6.99	2.47	6.59	1.433
LUBBOCK 453340001A01	77*	20	5.3	6.3	6.3	3.35	1.36	3.06	1.593
PASADENA 454060002A01	77*	27	12.4	12.4	19.0	8.17	3.53	7.46	1.554
SAN ANTONIO 454570034A01	77*	23	8.3	8.3	8.3	4.26	1.85	3.90	1.548
WICHITA FALLS 455560002A01	77	29	6.6	6.6	8.1	3.46	1.72	3.08	1.631
UTAH									
OGDEN 460680001A01	77*	22	15.1	17.8	17.8	4.72	4.28	3.66	1.961
SALT LAKE CITY 460920001A01	77*	24	28.1	30.9	30.9	7.22	7.53	5.28	2.050
VERMONT									
BURLINGTON 470140003A01	77	26	10.4	10.4	10.5	6.65	2.11	6.30	1.420

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
VIRGINIA										
DANVILLE 480920001A01	77	29	4.4	6.0	8.2	9.7	9.9	12.6	15.4	19.7
FAIRFAX CO 481060001A01	77*	27	8.0	8.3	10.5	12.4	12.8	14.4	18.5	22.6
HAMPTON 481440001A01	77	30	5.5	6.8	9.4	12.0	12.5	12.9	15.0	16.1
LYNCHBURG 481840002A01	77	30	4.7	5.9	7.5	9.1	9.7	13.0	15.0	20.3
NORFOLK 482140001A01	77*	26	4.7	7.6	8.7	10.5	12.1	12.7	14.3	15.7
PORTSMOUTH 482440001A01	77*	26	4.3	6.4	7.3	9.5	10.0	10.1	14.1	16.3
RICHMOND 482660002A01	77*	26	6.8	7.0	10.0	11.9	13.4	14.9	16.4	20.2
ROANOKE 482700003A01	77*	25	3.8	5.0	6.0	7.2	8.3	10.2	11.7	20.1
WASHINGTON										
SEATTLE 491840001A01	77	31	3.0	3.4	4.1	5.0	5.7	6.3	6.9	7.3
SPOKANE 492040001A01	77*	26	1.8	1.9	2.3	2.5	2.8	3.0	3.1	3.9
TACOMA 492140001A01	77	28	1.6	2.3	4.0	4.7	5.0	5.9	6.1	6.3
WEST VIRGINIA										
CHARLESTON 500280001A01	77*	26	4.8	6.3	8.1	11.2	14.8	16.9	19.0	20.8
SOUTH CHARLEST 501760001A01	77*	24	3.5	5.6	8.2	11.2	16.9	20.2	21.8	26.7
WISCONSIN										
EAU CLAIRE 510840002A01	77*	20	4.6	5.0	5.4	6.4	6.8	7.0	7.5	9.3
KENOSHA 511540001A01	77*	23	2.8	3.4	5.9	7.7	8.7	9.3	10.5	15.2
MADISON 511860001A01	77	28	4.1	4.9	5.9	7.5	7.9	8.3	9.0	10.4

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
VIRGINIA									
DANVILLE 480920001A01	77	29	25.6	25.6	26.1	11.64	5.97	10.41	1.600
FAIRFAX CO 481060001A01	77*	27	26.2	26.2	27.0	14.19	5.79	13.21	1.453
HAMPTON 481440001A01	77	30	21.2	21.2	25.1	12.04	4.34	11.34	1.423
LYNCHBURG 481840002A01	77	30	21.7	21.7	28.9	11.25	5.94	10.03	1.602
NORFOLK 482140001A01	77*	26	24.8	24.8	24.9	11.74	4.92	10.90	1.473
PORTSMOUTH 482440001A01	77*	26	21.9	21.9	26.2	10.76	5.20	9.78	1.539
RICHMOND 482660002A01	77*	26	22.0	22.0	27.5	13.23	5.29	12.31	1.469
ROANOKE 482700003A01	77*	25	21.6	24.6	24.6	9.54	5.73	8.30	1.674
WASHINGTON									
SEATTLE 491840001A01	77	31	7.7	8.0	8.4	5.27	1.59	5.05	1.355
SPOKANE 492040001A01	77*	26	4.6	4.6	5.1	2.81	.90	2.69	1.340
TACOMA 492140001A01	77	28	7.7	7.7	8.2	4.87	1.63	4.56	1.485
WEST VIRGINIA									
CHARLESTON 500280001A01	77*	26	24.4	24.4	29.3	13.38	6.57	11.87	1.662
SOUTH CHARLEST 501760001A01	77*	24	30.2	35.9	35.9	15.25	8.73	12.91	1.835
WISCONSIN									
EAU CLAIRE 510840002A01	77*	20	9.5	10.8	10.8	6.76	1.69	6.58	1.269
KENOSHA 511540001A01	77*	23	15.5	21.0	21.0	8.62	4.53	7.58	1.693
MADISON 511860001A01	77	28	12.7	12.7	13.9	7.64	2.47	7.28	1.369

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
WISCONSIN										
MILWAUKEE										
512200099A01	77	26	3.8	4.4	6.1	8.6	9.9	10.3	12.2	16.5
RACINE										
512880002A01	77	28	3.0	4.6	6.1	7.4	8.1	8.9	9.4	11.6
SUPERIOR										
513480001A01	77	21	3.0	3.7	5.1	5.7	6.5	6.7	7.8	9.8

* INDICATES YEARLY CRITERIA NOT MET

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POLLUTANT - 12403 - SULFATE                        ANALYTICAL QUALITY   95% CONF.
METHOD - 91 - HI-VOL  COLORIMETRIC                  CONC. RANGE    BIAS PRECISION
UNITS - 01 - UG/CU METER (25 C)                        (UG/M3)      (%)       (%)
                                                          <6.0   -6.8    +- 9.0
                                                      6.0-20.0   -5.3    +- 5.0
                                                         >20.0   -5.9    +- 3.0

                                                       ARITHMETIC      GEOMETRIC
SITE:           YR     NO.     95      98     MAX    MEAN     STDEV   MEAN       STD

WISCONSIN
 MILWAUKEE
 512200099A01   77     26    17.7    17.7    20.5    9.45      4.50    8.50    1.597

 RACINE
 512880002A01   77     28    14.4    14.4    15.6    8.11      3.01    7.60    1.447

 SUPERIOR
 513480001A01   77     21    10.1    10.2    10.2    6.34      2.00    6.05    1.370
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POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ARIZONA										
GRAND CANYON N										
030370001A03	77	25	LD	1.0	1.5	1.7	1.9	2.5	3.3	4.1
DELAWARE										
KENT CO										
080060001A03	77*	23	5.1	5.3	6.4	7.4	8.2	10.4	12.1	15.8
FLORIDA										
HIGHLANDS CO										
101780002A03	77*	21	1.6	1.6	3.2	4.0	4.7	5.0	5.8	8.0
HAWAII										
MAUNA LOA										
120080001A03	77*	23	LD	NO. OF SAMPLES (12) BELOW MIN. DET. > 50%						
IDAHO										
BUTTE CO										
130340001A03	77*	22	LD	LD	.8	1.8	1.9	2.2	2.5	2.9
INDIANA										
MONROE CO										
152800001A03	77*	18	5.5	5.8	8.8	11.5	13.9	15.2	17.1	24.6
PARKE CO										
153260001A03	77*	22	5.5	5.6	8.1	10.7	11.2	11.5	13.3	17.9
MAINE										
ACADIA NAT PAR										
200010001A03	77	24	1.0	1.7	4.2	5.3	5.5	6.2	6.6	8.2
MARYLAND										
CALVERT CO										
210280001A03	77*	25	4.1	6.7	8.2	11.1	11.7	12.5	14.5	19.6
MISSISSIPPI										
JACKSON CO										
251280001A03	77*	22	2.9	3.9	5.1	6.2	6.5	7.5	9.9	14.2
MISSOURI										
SHANNON CO										
264480002A03	77*	22	1.7	1.9	3.4	5.3	5.8	6.6	7.3	10.8
MONTANA										
GLACIER NAT PA										
270570001A03	77*	17	.6	1.4	1.7	2.0	2.1	2.5	2.9	3.4

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
ARIZONA									
GRAND CANYON N									
030370001A03	77	25	4.4	5.0	5.0	2.18	1.21	1.85	1.871
DELAWARE									
KENT CO									
080060001A03	77*	23	16.4	21.3	21.3	9.37	4.37	8.58	1.509
FLORIDA									
HIGHLANDS CO									
101780002A03	77*	21	10.5	14.0	14.0	4.79	2.98	4.10	1.755
HAWAII									
MAUNA LOA									
120080001A03	77*	23			3.6				
IDAHO									
BUTTE CO									
130340001A03	77*	22	3.1	4.0	4.0	1.66	1.03	1.27	2.307
INDIANA									
MONROE CO									
152800001A03	77*	18	29.1	43.3	43.3	14.90	9.36	12.88	1.705
PARKE CO									
153260001A03	77*	22	18.7	25.3	25.3	11.15	4.93	10.23	1.526
MAINE									
ACADIA NAT PAR									
200010001A03	77	24	10.3	19.0	19.0	5.62	3.53	4.79	1.811
MARYLAND									
CALVERT CO									
210280001A03	77*	25	25.7	28.8	28.8	11.98	6.04	10.75	1.603
MISSISSIPPI									
JACKSON CO									
251280001A03	77*	22	15.1	16.7	16.7	7.50	3.92	6.69	1.614
MISSOURI									
SHANNON CO									
264480002A03	77*	22	11.5	21.2	21.2	6.09	4.30	5.06	1.838
MONTANA									
GLACIER NAT PA									
270570001A03	77*	17	3.9	4.1	4.1	2.23	.93	2.04	1.583

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
MONTANA										
ROSEBUD CO										
271360026A03	77*	24	.9	1.0	1.5	1.8	1.8	2.1	2.5	3.0
NEVADA										
WHITE PINE CO										
290560001A03	77	29	LD	.6	1.1	1.3	1.6	1.8	2.2	2.8
NEW HAMPSHIRE										
COOS CO										
300140001A03	77*	25	LD	2.3	4.9	6.5	6.8	8.3	9.0	10.6
OREGON										
CURRY CO										
380440001A03	77	28	.9	1.3	1.9	3.5	4.1	4.8	5.8	6.5
PENNSYLVANIA										
CLARION CO										
391760001A03	77*	21	4.7	5.7	8.1	9.5	10.2	11.7	16.6	17.5
RHODE ISLAND										
WASHINGTON CO										
410380002A03	77*	20	2.0	2.8	5.5	7.2	8.4	9.6	10.1	15.0
SOUTH CAROLINA										
RICHLAND CO										
421900002A03	77*	19	2.3	3.2	4.4	5.5	5.7	6.8	7.7	9.2
SOUTH DAKOTA										
BLACK HILLS NA										
430110001A03	77*	24	LD	LD	1.0	1.3	1.7	2.3	2.6	2.7
TENNESSEE										
CUMBERLAND CO										
440680001A03	77	29	3.5	5.1	6.1	7.6	9.4	11.0	12.9	19.8
TEXAS										
TOM GREEN CO										
455200001A03	77	26	.6	1.1	2.2	2.7	2.9	3.1	3.6	4.3
VERMONT										
ORANGE CO										
470360001A03	77*	20	1.5	1.8	3.1	5.4	7.0	7.6	8.0	8.9
VIRGINIA										
SHENANDOAH NAT										
482890001A03	77*	26	2.3	3.9	6.5	8.9	9.4	10.1	12.7	14.9

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-6.8	+- 9.0
6.0-20.0	-5.3	+- 5.0
>20.0	-5.9	+- 3.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
MONTANA ROSEBUD CO 271360026A03	77*	24	4.0	4.1	4.1	1.95	.86	1.79	1.505
NEVADA WHITE PINE CO 290560001A03	77	29	3.6	3.6	4.1	1.63	.97	1.35	1.979
NEW HAMPSHIRE COOS CO 300140001A03	77*	25	11.7	12.2	12.2	6.49	3.13	5.35	2.231
OREGON CURRY CO 380440001A03	77	28	8.3	8.3	8.3	3.87	2.19	3.24	1.899
PENNSYLVANIA CLARION CO 391760001A03	77*	21	20.9	30.0	30.0	11.51	6.01	10.36	1.573
RHODE ISLAND WASHINGTON CO 410380002A03	77*	20	15.5	18.9	18.9	8.26	4.34	7.21	1.745
SOUTH CAROLINA RICHLAND CO 421900002A03	77*	19	10.4	10.6	10.6	6.08	2.42	5.62	1.513
SOUTH DAKOTA BLACK HILLS NA 430110001A03	77*	24	2.8	2.9	2.9	1.59	.89	1.27	2.163
TENNESSEE CUMBERLAND CO 440680001A03	77	29	21.3	21.3	21.6	10.00	5.44	8.76	1.677
TEXAS TOM GREEN CO 455200001A03	77	26	4.9	4.9	4.9	2.75	1.18	2.46	1.684
VERMONT ORANGE CO 470360001A03	77*	20	10.9	15.9	15.9	6.09	3.53	5.14	1.873
VIRGINIA SHENANDOAH NAT 482890001A03	77*	26	17.9	17.9	18.5	9.35	4.40	8.33	1.665

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
VIRGINIA WYTHE CO 483440001A03	77*	26	.7	3.6	5.0	7.0	8.1	8.9	12.6	18.8
WISCONSIN DOOR CO 510780001A03	77*	16	1.4	2.0	3.0	3.1	4.8	4.8	6.5	7.1
WYOMING YELLOWSTONE NA 520860001A03	77*	18	LD	.7	.9	1.7	1.9	2.4	2.6	2.8

* INDICATES YEARLY CRITERIA NOT MET

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POLLUTANT - 12403 - SULFATE                           ANALYTICAL QUALITY   95% CONF.
METHOD - 91 - HI-VOL  COLORIMETRIC                     CONC. RANGE    BIAS PRECISION
UNITS - 01 - UG/CU METER (25 C)                          (UG/M3)       (%)        (%)
                                                             <6.0   -6.8     +- 9.0
                                                          6.0-20.0  -5.3     +- 5.0
                                                             >20.0  -5.9     +- 3.0

                                                         ARITHMETIC       GEOMETRIC
SITE:            YR     NO.     95      98      MAX    MEAN     STDEV   MEAN       STD

VIRGINIA
 WYTHE CO
 483440001A03  77*     26    20.6    20.6    24.5    8.93      6.21    7.07    2.103

WISCONSIN
 DOOR CO
 510780001A03  77*     16     9.6    10.6    10.6    4.67      2.72    4.00    1.787

WYOMING
 YELLOWSTONE NA
 520860001A03  77*     18     3.2     3.7     3.7    1.77       .98    1.47    1.991
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POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ALABAMA										
BIRMINGHAM										
010380003A01	78*	20	5.1	7.9	8.7	10.4	11.6	13.9	18.3	20.0
GADSDEN										
011480001A01	78*	17	6.7	7.4	8.2	12.0	12.4	13.3	13.6	18.5
HUNTSVILLE										
011860001A01	78*	15	4.8	6.1	8.3	10.4	13.2	16.9	18.0	23.5
ALASKA										
ANCHORAGE										
020040003A01	78*	17	LD	.6	.8	1.3	1.3	1.5	1.8	1.8
FAIRBANKS										
020160016A01	78*	24	1.5	1.8	2.2	3.2	3.4	3.7	4.0	5.0
ARIZONA										
DOUGLAS										
030240004A01	78	24	2.0	2.2	2.9	3.3	3.8	4.9	6.2	8.6
PHOENIX										
030600002A01	78*	22	2.0	2.1	2.7	3.4	3.6	4.1	5.9	6.4
TUCSON										
030860001A01	78*	24	1.1	2.0	2.3	2.9	3.3	4.5	4.6	5.6
ARKANSAS										
LITTLE ROCK										
041440001A01	78	20	2.7	2.8	4.7	7.3	9.6	10.2	12.1	12.2
TEXARKANA										
042560001A01	78*	16	2.3	3.1	3.9	4.6	5.7	6.4	7.9	8.4
WEST MEMPHIS										
042740004A01	78*	17	2.8	4.2	5.2	7.9	8.4	9.1	9.7	10.7
CALIFORNIA										
ANAHEIM										
050230001A01	78*	24	2.7	3.7	4.6	6.9	8.6	10.8	14.2	19.8
BERKELEY										
050740001A01	78*	24	1.7	2.4	3.1	3.8	4.0	4.7	5.1	6.2
FRESNO										
052800002A01	78*	24	2.4	2.9	3.7	4.4	4.8	5.5	6.2	6.8
LOS ANGELES										
054180001A01	78*	20	2.2	2.9	4.2	8.0	9.3	11.5	13.8	16.9
ONTARIO										
055380001A01	78*	24	2.8	2.9	4.4	7.9	9.5	13.5	15.9	28.3

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

						ARITHMETIC		GEOMETRIC	
SITE:	YR	NO.	95	98	MAX	MEAN	STDEV	MEAN	STD
ALABAMA									
BIRMINGHAM 010380003A01	78*	20	23.5	25.1	25.1	12.94	5.57	11.92	1.513
GADSDEN 011480001A01	78*	17	18.8	25.6	25.6	12.04	5.07	11.20	1.465
HUNTSVILLE 011860001A01	78*	15	23.5	34.4	34.4	14.00	8.03	12.16	1.726
ALASKA									
ANCHORAGE 020040003A01	78*	17	2.3	2.6	2.6	1.31	.61	1.15	1.775
FAIRBANKS 020160016A01	78*	24	5.0	5.2	5.2	3.24	1.17	3.03	1.455
ARIZONA									
DOUGLAS 030240004A01	78	24	10.3	13.9	13.9	4.66	2.93	4.03	1.686
PHOENIX 030600002A01	78*	22	6.5	8.4	8.4	3.96	1.77	3.63	1.529
TUCSON 030860001A01	78*	24	7.1	7.9	7.9	3.51	1.70	3.16	1.591
ARKANSAS									
LITTLE ROCK 041440001A01	78	20	15.0	18.3	18.3	8.22	4.35	7.12	1.765
TEXARKANA 042560001A01	78*	16	9.8	13.0	13.0	5.74	2.87	5.17	1.595
WEST MEMPHIS 042740004A01	78*	17	13.6	14.0	14.0	7.65	3.21	7.02	1.548
CALIFORNIA									
ANAHEIM 050230001A01	78*	24	28.5	29.9	29.9	9.95	7.39	7.99	1.932
BERKELEY 050740001A01	78*	24	8.3	55.3	55.3	6.20	10.55	4.29	1.904
FRESNO 052800002A01	78*	24	7.1	8.1	8.1	4.84	1.46	4.63	1.358
LOS ANGELES 054180001A01	78*	20	16.9	31.1	31.1	9.57	6.94	7.58	2.042
ONTARIO 055380001A01	78*	24	33.8	36.2	36.2	11.16	9.60	8.22	2.187

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
CALIFORNIA										
SACRAMENTO 056580001A01	78*	24	.6	.9	1.7	2.3	2.7	3.3	3.7	5.3
SAN BERNARDINO 056680001A01	78*	24	.9	1.1	3.3	6.9	8.8	11.1	12.5	18.4
SAN DIEGO 056800004A01	78*	24	1.7	2.5	4.7	7.6	7.8	9.0	10.4	17.5
SAN JOSE 056980004A01	78*	24	1.3	1.9	2.2	2.6	2.9	3.8	4.7	5.6
SANTA ANA 057180001A01	78*	20	2.7	2.8	4.3	6.6	7.9	9.1	12.8	14.2
CONNECTICUT										
BRIDGEPORT 070060001A01	78	30	3.1	4.5	7.1	8.1	9.3	9.7	10.4	11.8
HARTFORD 070420002A01	78*	21	3.8	3.9	6.6	8.8	9.5	10.9	12.1	13.4
WATERBURY 071240123A01	78	31	3.6	4.2	6.5	7.8	8.9	9.8	10.3	13.4
FLORIDA										
JACKSONVILLE 101960049A01	78*	23	4.9	5.4	8.4	10.5	11.8	12.6	14.8	15.8
TAMPA 104360002A01	78*	23	5.6	6.3	8.0	10.0	11.2	11.8	12.0	13.9
GEORGIA										
ATLANTA 110200001A01	78*	24	4.6	5.6	8.4	12.6	12.9	15.8	18.1	21.2
IDAHO										
BOISE CITY 130220001A01	78	26	.8	1.0	1.6	2.3	2.6	2.6	3.5	4.0
INDIANA										
EAST CHICAGO 151180001A01	78*	18	7.7	8.0	11.3	13.6	17.7	18.1	18.8	23.9
EVANSVILLE 151300006A01	78*	23	7.3	7.6	10.2	11.5	13.8	15.9	18.4	22.6
FORT WAYNE 151380003A01	78	25	4.9	6.7	8.3	13.0	13.7	15.3	19.2	25.8

* INDICATES YEARLY CRITERIA NOT MET

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POLLUTANT - 12403 - SULFATE                          ANALYTICAL QUALITY   95% CONF.
METHOD - 91 - HI-VOL  COLORIMETRIC                    CONC. RANGE    BIAS PRECISION
UNITS - 01 - UG/CU METER (25 C)                           (UG/M3)       (%)       (%)
                                                             <6.0    -7.3    +-11.0
                                                         6.0-20.0    -3.7    +- 9.0
                                                            >20.0    -5.5    +- 4.0

                                                            ARITHMETIC        GEOMETRIC
SITE:              YR     NO.     95      98      MAX     MEAN     STDEV    MEAN      STD

CALIFORNIA
 SACRAMENTO
 056580001A01     78*     24     6.4     6.6     6.6     2.74      1.66     2.28    1.893

 SAN BERNARDINO
 056680001A01     78*     24    21.1    36.7    36.7     8.94      8.17     5.94    2.701

 SAN DIEGO
 056800004A01     78*     24    18.1    19.3    19.3     8.17      4.81     6.87    1.871

 SAN JOSE
 056980004A01     78*     24     8.1    11.2    11.2     3.57      2.22     3.13    1.639

 SANTA ANA
 057180001A01     78*     20    23.6    26.5    26.5     8.79      6.60     7.00    1.974

CONNECTICUT
 BRIDGEPORT
 070060001A01     78      30    15.4    15.4    19.5     8.78      3.33     8.20    1.465

 HARTFORD
 070420002A01     78*     21    13.5    19.1    19.1     9.36      3.65     8.68    1.501

 WATERBURY
 071240123A01     78      31    15.9    16.4    16.6     8.47      3.55     7.81    1.513

FLORIDA
 JACKSONVILLE
 101960049A01     78*     23    16.7    22.3    22.3    10.98      4.42    10.15    1.508

 TAMPA
 104360002A01     78*     23    14.5    15.9    15.9    10.12      2.88     9.72    1.343

GEORGIA
 ATLANTA
 110200001A01     78*     24    27.7    28.6    28.6    13.21      6.58    11.73    1.659

IDAHO
 BOISE CITY
 130220001A01     78      26     4.7     4.7     4.8     2.39      1.18     2.11    1.687

INDIANA
 EAST CHICAGO
 151180001A01     78*     18    30.9    37.2    37.2    16.61      7.75    15.18    1.530

 EVANSVILLE
 151300006A01     78*     23    27.5    29.2    29.2    14.18      6.35    12.99    1.524

 FORT WAYNE
 151380003A01     78      25    26.7    60.3    60.3    15.13     11.36    12.60    1.793
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POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
INDIANA										
GARY 151520001A01	78*	25	6.5	7.1	9.5	12.3	13.7	15.6	16.2	27.1
HAMMOND 151780001A01	78*	24	5.3	7.4	11.3	14.1	16.1	18.8	23.3	25.4
INDIANAPOLIS 152040002A01	78*	19	6.9	7.4	8.3	10.2	10.4	12.1	13.6	21.2
NEW ALBANY 152980002A01	78*	22	7.9	9.0	11.6	12.5	15.7	17.0	18.0	23.9
SOUTH BEND 153880002A01	78*	23	2.8	4.3	6.4	7.9	9.3	10.1	11.9	20.7
TERRE HAUTE 154080001A01	78	24	6.0	6.0	8.9	12.0	13.4	15.4	18.8	24.6
IOWA										
DAVENPORT 161060001A01	78	28	1.1	3.8	5.4	7.4	8.0	8.6	10.4	11.6
DES MOINES 161180001A01	78*	23	3.0	3.4	5.0	5.8	6.2	6.5	6.7	7.4
DUBUQUE 161260008A01	78*	22	2.6	4.1	5.4	7.3	7.7	10.0	12.2	19.0
KANSAS										
KANSAS CITY 171800011A01	78	27	2.8	5.0	7.1	8.9	9.6	10.6	12.9	18.0
KANSAS CITY 171800015A01	78	28	3.7	4.6	5.5	7.8	8.7	10.0	10.5	13.2
TOPEKA 173560001A01	78*	25	2.0	3.0	4.5	5.7	6.5	6.7	7.0	10.8
WICHITA 173740001A01	78*	25	1.9	2.3	3.4	4.1	4.2	4.7	6.3	7.8
KENTUCKY										
ASHLAND 180080002A01	78*	19	6.1	6.8	13.0	21.4	22.8	24.1	28.9	35.1
COVINGTON 180800001A01	78*	18	6.3	7.2	9.2	13.5	14.6	17.2	17.4	19.9
LOUISIANA										
BATON ROUGE 190280002A01	78*	24	3.6	4.1	5.8	7.0	8.6	10.6	11.3	17.1

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
INDIANA									
GARY 151520001A01	78*	25	49.0	51.8	51.8	15.78	11.56	13.35	1.716
HAMMOND 151780001A01	78*	24	34.5	37.8	37.8	16.95	8.21	15.17	1.632
INDIANAPOLIS 152040002A01	78*	19	35.8	48.2	48.2	13.99	10.77	11.75	1.722
NEW ALBANY 152980002A01	78*	22	27.0	33.8	33.8	15.45	6.56	14.33	1.472
SOUTH BEND 153880002A01	78*	23	21.7	39.8	39.8	10.67	7.95	8.89	1.791
TERRE HAUTE 154080001A01	78	24	33.1	55.4	55.4	15.05	10.71	12.79	1.724
IOWA									
DAVENPORT 161060001A01	78	28	14.7	14.7	20.2	7.87	3.91	6.92	1.746
DES MOINES 161180001A01	78*	23	8.1	15.0	15.0	5.99	2.38	5.65	1.404
DUBUQUE 161260008A01	78*	22	19.4	30.1	30.1	9.36	6.35	7.93	1.763
KANSAS									
KANSAS CITY 171800011A01	78	27	19.9	19.9	31.2	10.50	5.96	9.25	1.653
KANSAS CITY 171800015A01	78	28	15.6	15.6	17.2	8.47	3.53	7.81	1.507
TOPEKA 173560001A01	78*	25	10.9	12.1	12.1	5.98	2.52	5.47	1.555
WICHITA 173740001A01	78*	25	11.0	11.1	11.1	4.74	2.46	4.25	1.592
KENTUCKY									
ASHLAND 180080002A01	78*	19	57.9	228.4	228.4	31.49	49.27	19.84	2.309
COVINGTON 180800001A01	78*	18	26.9	31.6	31.6	14.62	6.72	13.33	1.551
LOUISIANA									
BATON ROUGE 190280002A01	78*	24	18.0	27.8	27.8	9.23	5.47	8.10	1.649

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
LOUISIANA										
IBERVILLE PAR 191280002A01	78	28	.6	3.0	4.8	6.2	8.2	9.7	12.6	14.3
NEW ORLEANS 192020002A01	78*	24	3.7	3.8	7.9	9.6	11.1	12.9	14.0	23.4
SHREVEPORT 192740001A01	78*	24	2.2	3.4	4.4	5.2	5.6	8.8	12.2	13.6
MAINE										
PORTLAND 200960004A01	78	27	4.1	5.9	7.4	8.6	8.8	9.8	11.3	11.6
MASSACHUSETTS										
BOSTON 220240012A01	78*	26	4.7	5.5	7.5	8.6	9.4	11.3	12.7	14.1
CAMBRIDGE 220360001A01	78	28	3.2	5.6	6.6	7.0	8.0	8.7	10.5	12.1
FALL RIVER 220580001A01	78	29	4.0	5.6	8.4	9.7	10.1	11.2	12.5	14.3
NEW BEDFORD 221500002A01	78	26	3.1	4.0	6.8	8.0	8.3	8.6	9.8	9.9
SPRINGFIELD 222160002A01	78	29	4.5	5.2	6.9	7.7	8.2	9.0	10.5	12.5
WORCHESTER 222640004A01	78	29	2.4	5.9	6.6	7.7	8.2	9.0	9.4	11.1
MICHIGAN										
FLINT 231580008A01	78*	22	3.9	5.5	7.5	9.3	9.7	10.4	14.5	30.0
LANSING 232840001A01	78*	23	3.7	5.0	8.3	9.9	10.4	12.2	14.2	30.9
SAGINAW 234760001A01	78*	22	3.8	5.3	6.6	8.3	8.7	10.8	13.6	23.9
MINNESOTA										
DULUTH 241040017A01	78*	24	1.2	2.2	3.5	4.2	4.7	5.2	5.5	5.8
MINNEAPOLIS 242260027A01	78	28	2.4	3.3	4.5	5.5	6.6	6.9	7.5	8.4
ST PAUL 243300031A01	78*	17	2.4	3.2	4.5	5.2	5.4	6.2	6.8	7.4

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

						ARITHMETIC		GEOMETRIC	
SITE:	YR	NO.	95	98	MAX	MEAN	STDEV	MEAN	STD
LOUISIANA									
IBERVILLE PAR 191280002A01	78	28	18.0	18.0	32.4	8.66	6.39	6.79	2.136
NEW ORLEANS 192020002A01	78*	24	24.8	31.6	31.6	11.93	6.85	10.33	1.730
SHREVEPORT 192740001A01	78*	24	15.3	17.1	17.1	7.31	4.37	6.25	1.760
MAINE									
PORTLAND 200960004A01	78	27	12.8	12.8	14.2	8.86	2.42	8.53	1.331
MASSACHUSETTS									
BOSTON 220240012A01	78*	26	16.6	16.6	23.3	9.89	4.13	9.20	1.462
CAMBRIDGE 220360001A01	78	28	13.0	13.0	14.0	8.15	2.66	7.75	1.388
FALL RIVER 220580001A01	78	29	20.4	20.4	23.4	10.55	4.35	9.79	1.475
NEW BEDFORD 221500002A01	78	26	12.4	12.4	19.1	8.09	3.10	7.57	1.459
SPRINGFIELD 222160002A01	78	29	14.9	14.9	18.2	8.72	3.24	8.22	1.407
WORCHESTER 222640004A01	78	29	14.6	14.6	14.6	8.29	2.64	7.87	1.412
MICHIGAN									
FLINT 231580008A01	78*	22	36.8	42.5	42.5	12.97	10.30	10.55	1.834
LANSING 232840001A01	78*	23	31.3	36.6	36.6	13.22	8.83	11.17	1.765
SAGINAW 234760001A01	78*	22	26.0	28.9	28.9	11.30	7.34	9.61	1.743
MINNESOTA									
DULUTH 241040017A01	78*	24	6.9	8.2	8.2	4.42	1.53	4.13	1.499
MINNEAPOLIS 242260027A01	78	28	13.0	13.0	13.9	6.22	2.70	5.72	1.514
ST PAUL 243300031A01	78*	17	7.5	9.0	9.0	5.37	1.75	5.08	1.420

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
MISSISSIPPI										
JACKSON 251260002A01	78	31	3.0	4.3	6.2	8.3	9.8	11.6	13.8	16.1
MISSOURI										
KANSAS CITY 262380002A01	78	29	4.5	5.2	6.5	7.3	8.1	8.8	11.6	15.1
NEBRASKA										
LINCOLN 281560002A01	78	25	1.6	2.5	3.1	3.9	4.6	5.6	5.9	6.8
OMAHA 281880034A01	78*	15	2.5	3.1	4.1	4.8	6.0	7.3	7.6	10.0
NEVADA										
LAS VEGAS 290320001A01	78*	21	1.3	1.9	2.1	2.4	2.5	2.7	3.1	3.3
RENO 290480001A01	78	26	.6	.9	1.1	1.8	1.9	2.4	2.7	2.8
NEW JERSEY										
BAYONNE 310180001A01	78	23	3.3	4.7	7.3	8.3	9.7	10.6	12.6	14.2
CAMDEN 310720001A01	78	28	3.6	7.1	9.0	11.2	12.5	13.3	13.6	19.0
CAMDEN CO 310740003A01	78*	23	2.7	3.4	5.8	7.4	7.7	8.2	10.0	15.1
ELIZABETH 311300002A01	78	29	LD	5.5	8.0	9.5	10.6	11.4	13.4	15.6
GLASSBORO 311700001A01	78	27	5.3	6.5	8.4	9.2	9.5	11.3	13.8	17.4
JERSEY CITY 312320001A01	78*	23	3.1	4.7	8.0	9.5	10.3	11.1	12.7	16.3
NEWARK 313480001A01	78	26	3.6	6.1	7.5	9.4	10.4	11.8	14.1	15.3
PATERSON 314140001A01	78*	17	4.1	5.8	6.6	8.5	11.3	13.0	13.9	14.6
PERTH AMBOY 314220001A01	78	28	4.1	5.4	7.1	10.2	10.7	12.4	12.6	14.8
TRENTON 315400001A01	78	31	3.8	6.2	7.5	9.0	10.2	11.8	12.8	15.1

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

						ARITHMETIC		GEOMETRIC	
SITE:	YR	NO.	95	98	MAX	MEAN	STDEV	MEAN	STD
MISSISSIPPI									
JACKSON 251260002A01	78	31	16.1	22.6	27.5	9.94	5.50	8.72	1.676
MISSOURI									
KANSAS CITY 262380002A01	78	29	17.2	17.2	17.6	8.95	3.84	8.28	1.479
NEBRASKA									
LINCOLN 281560002A01	78	25	8.0	8.6	8.6	4.38	1.83	4.03	1.524
OMAHA 281880034A01	78*	15	10.0	10.8	10.8	5.92	2.70	5.37	1.582
NEVADA									
LAS VEGAS 290320001A01	78*	21	3.4	3.4	3.4	2.51	.57	2.44	1.272
RENO 290480001A01	78	26	3.8	3.8	11.8	2.23	2.12	1.79	1.837
NEW JERSEY									
BAYONNE 310180001A01	78	23	14.5	20.8	20.8	9.49	4.02	8.71	1.539
CAMDEN 310720001A01	78	28	22.7	22.7	26.6	12.31	5.18	11.32	1.527
CAMDEN CO 310740003A01	78*	23	16.0	16.5	16.5	8.11	3.74	7.33	1.590
ELIZABETH 311300002A01	78	29	15.9	15.9	22.3	10.15	4.34	8.79	1.979
GLASSBORO 311700001A01	78	27	19.1	19.1	20.7	10.80	4.21	10.11	1.442
JERSEY CITY 312320001A01	78*	23	17.5	24.9	24.9	10.44	4.70	9.52	1.560
NEWARK 313480001A01	78	26	15.5	15.5	20.3	10.22	3.89	9.52	1.478
PATERSON 314140001A01	78*	17	15.2	18.1	18.1	10.03	4.15	9.21	1.541
PERTH AMBOY 314220001A01	78	28	17.8	17.8	18.8	10.25	3.72	9.60	1.461
TRENTON 315400001A01	78	31	16.1	16.2	19.8	10.10	3.70	9.47	1.441

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
NEW MEXICO										
ALBUQUERQUE 320040001A01	78*	22	1.9	2.0	2.7	3.2	3.4	3.8	4.0	4.7
NORTH CAROLINA										
CHARLOTTE 340700001A01	78	30	4.2	5.7	8.1	10.5	12.1	13.9	15.8	20.4
DURHAM 341160001A01	78*	23	3.4	4.3	7.6	8.5	9.6	9.9	11.0	15.8
GREENSBORO 341740009A01	78*	25	3.6	4.3	8.5	10.0	10.2	11.1	13.4	17.3
MOREHEAD CITY 342720002A01	78	28	2.3	4.1	5.6	7.0	8.7	10.5	14.1	14.8
WINSTON-SALEM 344460002A01	78	29	3.1	5.4	8.0	10.3	11.5	12.8	15.5	19.8
OHIO										
AKRON 360060014A01	78	26	5.7	7.6	9.6	10.8	12.2	17.6	19.1	21.3
CANTON 361000001A01	78*	25	5.5	6.8	8.4	10.4	11.6	15.9	17.2	18.4
CINCINNATI 361220001A01	78	30	6.4	6.8	8.4	10.3	13.1	14.1	14.8	16.4
CINCINNATI 361220019A01	78*	18	5.2	5.6	8.0	12.2	14.9	16.3	16.6	19.9
CLEVELAND 361300001A01	78	26	5.1	6.1	9.2	13.4	14.3	16.5	18.2	20.1
COLUMBUS 361460001A01	78*	26	5.6	6.7	8.7	11.4	12.9	13.9	17.8	21.0
DAYTON 361660001A01	78	26	4.8	5.8	7.1	10.5	11.9	13.3	16.4	18.6
MANSFIELD 363840008A01	78	29	4.9	7.6	8.6	10.5	11.3	13.2	14.5	16.9
PORTSMOUTH 365620002A01	78	27	5.1	6.0	9.1	10.2	10.7	13.2	15.2	16.5
STEUBENVILLE 366420012A01	78	24	4.0	6.1	9.7	13.6	14.7	20.9	22.2	29.7
TOLEDO 366600006A01	78*	20	5.9	8.6	9.7	12.0	14.1	15.1	20.3	24.4

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	95% CONF. BIAS (%)	PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
NEW MEXICO									
ALBUQUERQUE 320040001A01	78*	22	4.7	5.6	5.6	3.34	.95	3.22	1.329
NORTH CAROLINA									
CHARLOTTE 340700001A01	78	30	21.3	21.3	22.3	11.79	5.36	10.62	1.611
DURHAM 341160001A01	78*	23	18.1	19.3	19.3	9.50	3.98	8.76	1.514
GREENSBORO 341740009A01	78*	25	18.1	18.4	18.4	10.00	4.45	9.00	1.626
MOREHEAD CITY 342720002A01	78	28	15.6	15.6	16.3	8.66	4.27	7.66	1.677
WINSTON-SALEM 344460002A01	78	29	21.5	21.5	22.0	11.66	5.30	10.48	1.625
OHIO									
AKRON 360060014A01	78	26	37.3	37.3	57.7	15.44	10.99	13.20	1.694
CANTON 361000001A01	78*	25	20.7	41.5	41.5	12.94	7.49	11.49	1.605
CINCINNATI 361220001A01	78	30	20.2	20.2	24.2	11.88	4.33	11.17	1.424
CINCINNATI 361220019A01	78*	18	23.1	26.7	26.7	13.33	6.17	11.97	1.633
CLEVELAND 361300001A01	78	26	39.0	39.0	64.7	15.69	12.50	12.90	1.811
COLUMBUS 361460001A01	78*	26	33.5	33.5	37.5	13.64	7.92	12.01	1.635
DAYTON 361660001A01	78	26	28.3	28.3	40.4	12.52	8.00	10.76	1.714
MANSFIELD 363840008A01	78	29	18.8	18.8	20.9	11.49	4.00	10.85	1.413
PORTSMOUTH 365620002A01	78	27	23.8	23.8	28.0	11.73	5.56	10.67	1.546
STEUBENVILLE 366420012A01	78	24	35.3	42.3	42.3	16.92	9.78	14.44	1.798
TOLEDO 366600006A01	78*	20	39.6	75.1	75.1	17.71	15.54	14.40	1.802

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
OHIO										
YOUNGSTOWN										
367760001A01	78	27	5.9	6.4	11.2	14.0	14.9	15.3	21.6	26.1
OKLAHOMA										
TULSA										
373000110A01	78*	21	2.3	2.4	4.3	5.5	7.2	7.4	9.1	11.2
OREGON										
PORTLAND										
381460001A01	78*	24	2.2	2.6	4.7	5.3	5.9	7.1	8.3	8.9
PENNSYLVANIA										
ALLENTOWN										
390120001A01	78*	19	4.5	6.2	7.3	8.6	9.6	9.9	13.5	15.2
BETHLEHEM										
390780002A01	78*	24	5.4	7.5	9.4	11.8	12.5	14.2	14.8	18.9
HARRISBURG										
393880361A01	78	26	4.3	5.8	7.6	9.7	11.0	11.2	12.7	14.3
HAZLETON										
393960001A01	78	28	3.7	6.0	7.5	9.6	11.6	12.5	13.1	14.3
READING										
397620001A01	78	29	4.7	6.6	9.2	12.2	12.6	13.0	13.8	15.7
PUERTO RICO										
GUAYANILLA CO										
401100003A01	78	28	3.6	4.6	5.1	5.9	6.3	6.7	7.6	7.9
GUAYNABO CO										
401140001A01	78*	25	3.7	6.0	6.9	7.8	8.1	9.7	10.2	12.2
PONCE										
401920002A01	78	27	2.2	2.8	3.5	4.1	4.2	4.5	5.1	5.5
SABANA SECA										
402065001A01	78*	25	3.2	3.6	4.9	5.4	5.6	7.3	8.7	10.2
SAN JUAN CO										
402160001A01	78*	24	2.4	2.4	2.9	3.8	4.2	4.4	4.7	5.4
RHODE ISLAND										
EAST PROVIDENC										
410120001A01	78*	19	3.0	4.7	7.8	9.0	9.4	9.6	10.7	12.4
SOUTH DAKOTA										
SIOUX FALLS										
431480001A01	78*	22	2.2	2.6	3.6	4.4	5.6	7.2	7.6	8.1

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
OHIO									
YOUNGSTOWN									
367760001A01	78	27	36.9	36.9	42.6	15.86	8.85	13.98	1.651
OKLAHOMA									
TULSA									
373000110A01	78*	21	11.4	19.8	19.8	6.72	4.02	5.82	1.721
OREGON									
PORTLAND									
381460001A01	78*	24	10.8	29.4	29.4	6.90	5.23	5.93	1.668
PENNSYLVANIA									
ALLENTOWN									
390120001A01	78*	19	15.8	18.8	18.8	9.95	3.80	9.32	1.445
BETHLEHEM									
390780002A01	78*	24	19.3	21.5	21.5	12.42	4.19	11.74	1.412
HARRISBURG									
393880361A01	78	26	17.4	17.4	18.4	10.09	3.59	9.49	1.436
HAZLETON									
393960001A01	78	28	16.2	16.2	18.0	10.26	3.69	9.56	1.488
READING									
397620001A01	78	29	18.1	18.1	23.8	11.81	4.01	11.15	1.425
PUERTO RICO									
GUAYANILLA CO									
401100003A01	78	28	8.7	8.7	10.8	6.22	1.62	6.03	1.288
GUAYNABO CO									
401140001A01	78*	25	13.2	15.5	15.5	8.40	2.66	8.01	1.377
PONCE									
401920002A01	78	27	7.0	7.0	10.8	4.36	1.66	4.13	1.375
SABANA SECA									
402065001A01	78*	25	10.2	12.1	12.1	6.30	2.46	5.88	1.453
SAN JUAN CO									
402160001A01	78*	24	5.7	6.5	6.5	3.93	1.10	3.78	1.327
RHODE ISLAND									
EAST PROVIDENC									
410120001A01	78*	19	12.9	17.8	17.8	9.19	3.25	8.60	1.481
SOUTH DAKOTA									
SIOUX FALLS									
431480001A01	78*	22	10.9	11.0	11.0	5.50	2.61	4.94	1.611

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
TENNESSEE										
CHATTANOOGA 440380020A01	78	29	4.7	6.2	8.5	11.6	11.7	14.5	17.7	20.5
KNOXVILLE 441740003A01	78	29	6.3	6.6	10.0	11.1	11.7	14.7	15.8	17.5
MEMPHIS 442340001A01	78*	19	2.8	5.1	7.1	8.0	8.0	8.3	9.4	10.0
TEXAS										
AMARILLO 450070002A01	78*	17	1.9	2.2	2.7	3.0	3.0	3.3	3.6	3.6
AUSTIN 450220010A01	78	22	.9	1.5	2.8	4.4	4.8	5.7	6.6	9.1
BEAUMONT 450330001A01	78	24	3.5	3.7	6.2	7.2	7.9	10.7	10.9	14.9
CORPUS CHRISTI 451150001A01	78	26	1.7	3.4	4.9	6.3	6.8	8.3	11.0	12.3
EL PASO 451700002A01	78*	17	LD	4.5	6.1	6.5	6.5	7.2	7.5	8.0
FORT WORTH 451880001A01	78	23	2.0	2.5	3.6	4.9	5.2	6.8	8.2	11.3
HOUSTON 452560001A01	78	25	2.0	3.9	5.0	7.1	9.1	10.4	11.1	17.3
LUBBOCK 453340001A01	78	25	1.9	2.0	2.5	3.2	3.6	3.9	4.2	5.2
PASADENA 454060002A01	78*	23	6.2	6.4	7.9	9.7	10.9	14.8	15.8	19.8
SAN ANTONIO 454570034A01	78	25	1.4	2.6	3.3	5.1	5.3	6.7	7.8	9.5
WICHITA FALLS 455560002A01	78	26	1.5	2.4	3.3	3.6	3.9	4.3	4.6	5.7
UTAH										
OGDEN 460680001A01	78	29	1.2	2.0	2.6	2.9	2.9	3.3	4.1	5.1
SALT LAKE CITY 460920001A01	78*	25	.8	2.6	3.5	4.8	5.3	5.8	6.1	7.6
VIRGINIA										
DANVILLE 480920001A01	78	27	2.6	5.7	8.5	9.7	10.4	12.1	15.9	17.6

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	 STDEV	GEOMETRIC MEAN	 STD
TENNESSEE									
CHATTANOOGA 440380020A01	78	29	22.7	22.7	28.9	12.91	5.90	11.70	1.576
KNOXVILLE 441740003A01	78	29	19.5	19.5	22.9	12.27	4.31	11.54	1.434
MEMPHIS 442340001A01	78*	19	14.0	16.8	16.8	8.28	3.08	7.77	1.460
TEXAS									
AMARILLO 450070002A01	78*	17	5.8	8.0	8.0	3.35	1.48	3.13	1.414
AUSTIN 450220010A01	78	22	9.3	18.4	18.4	5.08	3.75	4.11	1.962
BEAUMONT 450330001A01	78	24	17.0	18.7	18.7	8.61	3.97	7.84	1.551
CORPUS CHRISTI 451150001A01	78	26	15.6	15.6	18.9	7.51	4.23	6.48	1.761
EL PASO 451700002A01	78*	17	8.3	8.3	8.3	6.29	1.87	5.44	2.247
FORT WORTH 451880001A01	78	23	13.2	14.5	14.5	6.02	3.42	5.23	1.708
HOUSTON 452560001A01	78	25	20.0	20.7	20.7	8.78	5.18	7.50	1.784
LUBBOCK 453340001A01	78	25	5.4	6.0	6.0	3.41	1.16	3.23	1.409
PASADENA 454060002A01	78*	23	20.8	25.8	25.8	11.95	5.48	10.90	1.539
SAN ANTONIO 454570034A01	78	25	10.8	19.9	19.9	5.75	3.80	4.88	1.783
WICHITA FALLS 455560002A01	78	26	9.4	9.4	10.9	4.22	2.11	3.83	1.541
UTAH									
OGDEN 460680001A01	78	29	6.6	6.6	7.0	3.31	1.35	3.08	1.464
SALT LAKE CITY 460920001A01	78*	25	8.3	9.3	9.3	4.77	2.05	4.28	1.682
VIRGINIA									
DANVILLE 480920001A01	78	27	20.5	20.5	21.1	11.02	4.83	9.97	1.613

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

URBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
VIRGINIA										
LYNCHBURG 481840002A01	78	29	3.3	4.9	6.3	8.7	9.0	9.6	11.3	12.2
NORFOLK 482140001A01	78	29	4.7	7.1	9.3	11.0	11.5	12.4	14.3	19.4
PORTSMOUTH 482440001A01	78*	25	6.4	8.9	10.5	11.9	12.7	15.2	16.4	18.6
WASHINGTON										
SEATTLE 491840001A01	78	30	4.2	4.8	5.3	6.2	6.6	6.8	7.5	8.9
SPOKANE 492040001A01	78	27	1.9	2.1	2.6	3.3	3.7	4.0	4.8	4.9
TACOMA 492140001A01	78	30	2.9	4.1	4.5	5.3	6.0	6.4	7.2	7.6
WEST VIRGINIA										
CHARLESTON 500280001A01	78*	23	7.4	7.8	13.9	16.6	18.5	20.1	24.0	29.0
WISCONSIN										
EAU CLAIRE 510840002A01	78	25	3.3	4.2	5.0	6.2	6.8	7.4	8.3	12.8
KENOSHA 511540003A01	78	30	4.2	6.7	7.9	9.6	10.8	15.0	15.5	17.9
MADISON 511860001A01	78	29	3.7	4.5	6.7	8.5	9.5	10.4	10.7	13.1
MILWAUKEE 512200099A01	78*	24	4.6	6.5	7.4	8.5	9.2	11.0	15.9	19.3
RACINE 512880002A01	78	29	3.4	5.5	6.9	8.4	9.3	11.7	15.5	16.9
SUPERIOR 513480001A01	78	26	3.6	4.5	5.3	6.0	6.7	7.5	9.0	9.6

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
VIRGINIA									
LYNCHBURG 481840002A01	78	29	16.0	16.0	20.1	8.91	3.74	8.22	1.504
NORFOLK 482140001A01	78	29	21.7	21.7	24.4	12.11	4.94	11.24	1.478
PORTSMOUTH 482440001A01	78*	25	19.5	20.8	20.8	12.97	3.92	12.40	1.364
WASHINGTON									
SEATTLE 491840001A01	78	30	10.1	10.1	11.8	6.56	1.75	6.36	1.282
SPOKANE 492040001A01	78	27	5.6	5.6	5.9	3.55	1.18	3.37	1.395
TACOMA 492140001A01	78	30	8.8	8.8	9.4	5.72	1.62	5.50	1.328
WEST VIRGINIA									
CHARLESTON 500280001A01	78*	23	45.3	65.8	65.8	20.05	13.16	17.27	1.700
WISCONSIN									
EAU CLAIRE 510840002A01	78	25	15.5	17.7	17.7	7.27	3.65	6.60	1.537
KENOSHA 511540003A01	78	30	31.3	31.3	36.9	12.34	7.24	10.83	1.651
MADISON 511860001A01	78	29	19.9	19.9	26.4	9.46	4.94	8.52	1.569
MILWAUKEE 512200099A01	78*	24	24.8	42.1	42.1	11.91	8.19	10.26	1.669
RACINE 512880002A01	78	29	27.6	27.6	33.1	10.98	6.65	9.58	1.666
SUPERIOR 513480001A01	78	26	10.2	10.2	16.5	6.97	2.68	6.57	1.397

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
ARKANSAS MONTGOMERY CO 041760001A03	78	24	1.8	2.0	3.3	4.4	5.8	6.7	8.4	11.8
DELAWARE KENT CO 080060001A03	78	30	3.4	5.6	6.8	8.5	9.1	11.9	13.3	18.1
IDAHO BUTTE CO 130340001A03	78	29	LD	LD	.8	1.2	1.9	2.3	2.7	3.8
INDIANA MONROE CO 152800001A03	78*	20	5.0	6.1	9.3	10.7	11.0	14.0	14.4	16.3
MAINE ACADIA NAT PAR 200010001A03	78*	23	.8	1.9	3.8	5.3	5.3	5.4	5.7	6.9
MARYLAND CALVERT CO 210280001A03	78*	23	4.9	5.6	7.6	9.6	10.2	11.2	13.4	17.2
MONTANA ROSEBUD CO 271360026A03	78*	24	1.2	1.2	2.0	2.9	3.1	3.9	4.0	4.9
NEVADA WHITE PINE CO 290560001A03	78*	24	LD	NO. OF SAMPLES (13) BELOW MIN. DET. > 50%						
NEW HAMPSHIRE COOS CO 300140001A03	78*	19	3.1	4.2	4.7	6.6	7.0	7.2	8.1	8.4
OREGON CURRY CO 380440001A03	78*	24	1.2	1.5	2.3	3.4	3.6	4.1	4.4	5.0
PENNSYLVANIA CLARION CO 391760001A03	78	30	2.1	3.7	5.9	6.9	8.7	11.7	13.7	15.6
RHODE ISLAND WASHINGTON CO 410380002A03	78*	17	1.6	3.2	4.5	6.0	6.0	6.5	7.6	8.4

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

						ARITHMETIC		GEOMETRIC	
SITE:	YR	NO.	95	98	MAX	MEAN	STDEV	MEAN	STD
ARKANSAS MONTGOMERY CO 041760001A03	78	24	12.2	15.7	15.7	5.96	3.74	4.98	1.850
DELAWARE KENT CO 080060001A03	78	30	20.8	20.8	20.8	10.15	4.85	9.13	1.601
IDAHO BUTTE CO 130340001A03	78	29	4.2	4.2	4.9	1.74	1.33	1.22	2.560
INDIANA MONROE CO 152800001A03	78*	20	21.0	37.5	37.5	12.46	7.10	11.13	1.590
MAINE ACADIA NAT PAR 200010001A03	78*	23	8.2	11.5	11.5	4.97	2.13	4.48	1.682
MARYLAND CALVERT CO 210280001A03	78*	23	17.7	18.0	18.0	10.51	4.12	9.78	1.474
MONTANA ROSEBUD CO 271360026A03	78*	24	5.9	6.6	6.6	3.12	1.44	2.80	1.621
NEVADA WHITE PINE CO 290560001A03	78*	24			1.9				
NEW HAMPSHIRE COOS CO 300140001A03	78*	19	9.8	10.4	10.4	6.53	2.04	6.22	1.392
OREGON CURRY CO 380440001A03	78*	24	5.1	5.8	5.8	3.36	1.25	3.11	1.515
PENNSYLVANIA CLARION CO 391760001A03	78	30	19.8	19.8	21.6	9.30	5.14	7.99	1.777
RHODE ISLAND WASHINGTON CO 410380002A03	78*	17	9.2	9.4	9.4	5.82	2.15	5.37	1.564

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

NONURBAN

SO4

SITE:	YR	NO.	MIN	10	30	50	60	70	80	90
SOUTH DAKOTA BLACK HILLS NA 430110001A03	78	27	LD	.9	1.5	2.0	2.2	2.8	3.5	3.9
TEXAS MATAGORDA CO 453530001A03	78*	18	1.0	1.2	2.5	3.5	5.2	5.7	7.3	10.2
TOM GREEN CO 455200001A03	78*	17	1.3	1.5	1.9	2.7	2.8	3.0	4.7	5.0
VIRGINIA SHENANDOAH NAT 482890001A03	78*	18	5.4	5.9	6.7	9.2	11.4	14.3	14.3	14.8
WYTHE CO 483440001A03	78*	17	4.0	5.3	6.3	8.0	8.7	10.0	16.4	17.2
WISCONSIN DOOR CO 510780001A03	78*	16	.7	2.2	4.3	5.2	6.7	6.9	7.4	8.6

* INDICATES YEARLY CRITERIA NOT MET

POLLUTANT - 12403 - SULFATE
METHOD - 91 - HI-VOL COLORIMETRIC
UNITS - 01 - UG/CU METER (25 C)

ANALYTICAL QUALITY CONC. RANGE (UG/M3)	BIAS (%)	95% CONF. PRECISION (%)
<6.0	-7.3	+-11.0
6.0-20.0	-3.7	+- 9.0
>20.0	-5.5	+- 4.0

SITE:	YR	NO.	95	98	MAX	ARITHMETIC MEAN	ARITHMETIC STDEV	GEOMETRIC MEAN	GEOMETRIC STD
SOUTH DAKOTA									
BLACK HILLS NA									
430110001A03	78	27	4.7	4.7	17.5	2.75	3.15	2.03	2.118
TEXAS									
MATAGORDA CO									
453530001A03	78*	18	13.4	13.9	13.9	5.31	3.89	4.10	2.145
TOM GREEN CO									
455200001A03	78*	17	6.5	7.1	7.1	3.13	1.79	2.73	1.700
VIRGINIA									
SHENANDOAH NAT									
482890001A03	78*	18	18.4	38.5	38.5	11.79	7.80	10.20	1.682
WYTHE CO									
483440001A03	78*	17	18.3	18.6	18.6	9.95	4.76	8.99	1.581
WISCONSIN									
DOOR CO									
510780001A03	78*	16	11.8	30.1	30.1	7.02	6.72	5.21	2.252

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